

SAFETY COMPLIANCE TESTING FOR FMVSS 201U
Occupant Protection In Interior Impact
Upper Interior Head Impact Protection

DAIMLERCHRYSLER CORPORATION
2003 Dodge Durango SXT 4-Door SUV
NHTSA No. C30305

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Dates: January 21-22, 2003
Report Date: January 23, 2003

FINAL REPORT

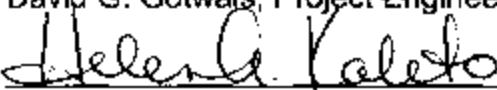
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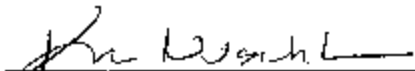


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16. Abstract A compliance test was conducted on the subject 2003 Dodge Durango SXT 4-Door SUV, NHTSA No. C30305, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201U compliance. The test was conducted at the MGA Research Corporation in Troy, Michigan on January 21-22, 2003. Test failures identified were as follows: <p align="center">NONE</p> The data recorded seems to indicate that the 2003 Dodge Durango SXT 4-Door SUV tested appears to comply with the requirements for FMVSS 201U which were set forth by the National Highway Traffic Safety Administration.			
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1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2003 Dodge Durango SXT 4-Door SUV, meets the performance requirements of FMVSS 201U, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted during January 21-22, 2003 on a 2003 Dodge Durango SXT 4-Door SUV, manufactured by DaimlerChrysler Corporation.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U_FRAME#2 dated October 18, 2001.

All tests were conducted at MGA Research Corporation in Troy, Michigan and were performed by MGA engineers and technicians. The FMVSS 201U impactor test machine was used to conduct the testing. Target locations were determined by using a Coordinate Measurement Machine in conjunction with the MGA EZ-Target™ program and MGA procedure MGATP201U_Test Series dated September 20, 2002.

2.0 COMPLIANCE TEST DATA SUMMARY

The 2003 Dodge Durango SXT 4-Door SUV was equipped with A, B, C, & D-Pillars, an adjustable seat belt anchorage on each B and C-Pillar, an assist handle on each A-Pillar, a coat hook located on each side rail between the C & D-Pillars, and a front and rear overhead light console. Upon completion of targeting the test vehicle, ten (10) targets were chosen to be impacted based upon engineering judgement and certification test data provided by DaimlerChrysler. Targets were chosen which appeared most likely to give high HIC(d) values. The ten (10) targets chosen were:

AP1	BP1	OP1	UR2
AP2	BP2	SR1	
AP3	BP3	UR1	

The 2003 Dodge Durango SXT 4-Door SUV tested appears to comply with the performance criteria for FMVSS 201U. The HIC(d) measured using the Part 572L (Free Motion Headform) was below 1000 for each tested component.

TABLE 2-1
SUMMARY TABLE OF TEST RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

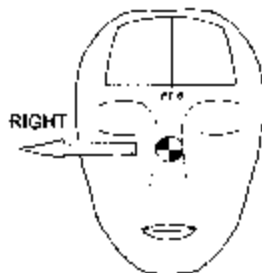
VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	145	45	23.3	699	706	18	25 Right
AP2	Left	202	26	23.8	387	293	12	12 Left
AP3	Right	159	40	23.9	496	437	3	1 Left
BP1	Right	90	25	23.3	595	568	40	2 Left
BP2	Left	270	9	23.7	613	593	4	1 Right
BP3	Right	87	-2	23.8	510	456	14	1 Left
OP1	Right	90	15	23.6	550	509	4	1 Right
SR1	Right	90	28	23.7	423	340	14	4 Left
UR1	Left	270	33	23.9	482	418	37	5 Left
UR2	Left	270	43	23.7	826	875	30	4 Left

Above and left/right refers to the position relative to reference pt. 0 where the target made contact with the Free Motion Headform. See the diagram below for details.



POST TEST COMMENTS:

The following description lists any post-test damage or other test observations for each target.

AP2 Left: The assist handle was bent during testing.

AP3 Right: The assist handle was bent during testing.

UR1 Left: Headliner deformation.

No damage was observed for any other targets.

REMARKS:

The targets listed were impacted in the following order:

Right: AP3, AP1, SR1, BP3, BP1, OP1

Left: AP2, UR1, BP2, UR2

The 150 mm rule was observed for targets horizontal to each other and the 200 mm rule was observed for vertical components.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kalet

TABLE 2-2
GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

INTERIOR TRIM INFORMATION: A, B, C, & D-Pillars, an adjustable seat belt anchorage on each B and C-Pillar, an assist handle on each A-Pillar, a coat hook located on each side rail between the C & D-Pillars, and a front and rear overhead light console.

SUNROOF INFORMATION:

Installed: Yes X No
Operation: Electric Manual

ROLL-BAR INFORMATION:

Installed: Yes X No
Padded: Yes X No
Braces: Yes X No

GENERAL INFORMATION:

Date Received: 1/14/03; Odometer Reading: 12 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: DaimlerChrysler Corporation

Date of Manufacture: October, 2002; VIN: 1D4HR38N33F527190

GVWR: 2745 kg;

GAWR FRONT: 1361 kg

GAWR REAR: 1727 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 241 kpa REAR: 241 kpaRecommended Tire Size: P245/70R16

Recommended Cold Tire Pressure:

FRONT: 241 kpa REAR: 241 kpaSize of Tire on Test Vehicle: P255/65R16Type of Spare Tire: P255/65R16; Space Saver: ; Standard: X

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ; Bucket X; Split Bench Number of Occupants: Front 2; Rear 3; TOTAL 5VEHICLE CAPACITY WEIGHT (VCW) = 476 kgNo. of Occupants x 68 kg = 340 kgRated Cargo/Luggage Weight (RCLW) = 136 kg (difference)

WEIGHT OF TEST VEHICLE AS DELIVERED AT LABORATORY: (with maximum fluids)

Right Front = 536.0 kg Right Rear = 402.0 kgLeft Front = 520.0 kg Left Rear = 440.5 kgTOTAL FRONT = 1056.0 kg TOTAL REAR = 842.5 kg% Total Weight = 55.6 % % Total Weight = 44.4 %TOTAL DELIVERED WEIGHT = 1898.5 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 1898.5 kgRated Cargo/Luggage Wt. = 136 kgTARGET TEST WEIGHT 2034.5 kg

WEIGHT OF TEST VEHICLE:

Right Front =	<u>538.0</u> kg	Right Rear =	<u>467.0</u> kg
Left Front =	<u>520.0</u> kg	Left Rear =	<u>509.5</u> kg
TOTAL FRONT =	<u>1058.0</u> kg	TOTAL REAR =	<u>976.5</u> kg
% Total Weight =	<u>52.0</u> %	% Total Weight =	<u>48.0</u> %
TOTAL TEST WEIGHT = <u>2034.5</u> kg			
Weight of ballast secured in vehicle's cargo area = <u>136.0</u> kg			

TEST VEHICLE ATTITUDE:

AS DELIVERED: Right Front 847 mm; Left Front 851 mm;
 Right Rear 876 mm; Left Rear 877 mm;
 Pitch Angle at Right Door Sill = 1.1° rear higher
 Pitch Angle at Left Door Sill = 1.1° rear higher
 Roll Angle at Front Bumper = 0.1° right higher
 Roll Angle at Rear Bumper = 0.1° right higher

FULLY LOADED: Right Front 849 mm; Left Front 853 mm;
 Right Rear 865 mm; Left Rear 863 mm;
 Pitch Angle at Right Door Sill = 0.9° rear higher
 Pitch Angle at Left Door Sill = 0.9° rear higher
 Roll Angle at Front Bumper = 0.0°
 Roll Angle at Rear Bumper = 0.1° right higher

AS TARGETED:

Pitch Angle at Right Door Sill = 0.9° rear higher
 Pitch Angle at Left Door Sill = 0.9° rear higher
 Roll Angle at Front Bumper = 0.0°
 Roll Angle at Rear Bumper = 0.1° right higher

AS TESTED (Targets Impacted on Right Side):

Pitch Angle at Right Door Sill = 0.9° rear higher
Pitch Angle at Left Door Sill = 0.9° rear higher
Roll Angle at Front Bumper = 0.0°
Roll Angle at Rear Bumper = 0.1° right higher

AS TESTED (Targets Impacted on Left Side):

Pitch Angle at Right Door Sill = 0.9° rear higher
Pitch Angle at Left Door Sill = 0.9° rear higher
Roll Angle at Front Bumper = 0.0°
Roll Angle at Rear Bumper = 0.1° right higher

VEHICLE WHEELBASE = 2880 mm

REMARKS: The seat travel distance was measured to be 220 mm for the driver front seat and 180 mm for the passenger front seat.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-3
HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE	MINIMUM HORIZONTAL ANGLE	MAXIMUM HORIZONTAL ANGLE
A-PILLAR	L 195°-255°	L 201.7°	L 248.3°
	R 105°-165°	R 113.5°	R 159.0°
B-PILLAR	L 195°-345°	L 197.2°	L 275.9°
	R 15°-165°	R 86.5°	R 162.4

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kalet

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXTVEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite MetallicVEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003TEST LABORATORY: MGA Research CorporationOBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	FH2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
SIDE RAIL	SR1	L 0°-50°	L 0°	L 28°
		R 0°-50°	R 0°	R 28°
	SR2A	L 0°-50°	L 0°	L 26°
		R 0°-50°	R 0°	R 26°
	SR2B	L 0°-50°	L 0°	L 24°
		R 0°-50°	R 0°	R 24°
	SR3A	L 0°-50°	L 0°	L 22°
		R 0°-50°	R 0°	R 21°
	SR3B	L 0°-50°	L 0°	L 36°
		R 0°-50°	R 0°	R 36°
A-PILLAR	AP1	L -5°-50°	L -5°	L 45°
		R -5°-50°	R -5°	R 45°
	AP2	L -5°-50°	L -5°	L 26°
		R -5°-50°	R -5°	R 23°
	AP3	L -5°-50°	L -5°	L 40°
		R -5°-50°	R -5°	R 40°

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
-PILLAR	BP1	L -10°-50°	L -10°	L 25°
		R -10°-50°	R -10°	R 25°
	BP2*	L 0°-50°	L 0°	L 9°
		R 0°-50°	R 0°	R 9°
	BP3	L -10°-50°	L -10°	L -2°
		R -10°-50°	R -10°	R -2°
	BP4	L -10°-50°	L -10°	L -6°
		R -10°-50°	R -10°	R -6°
OTHER PILLAR	OP1*	L 0°-50°	L 0°	L 15°
		R 0°-50°	R 0°	R 15°
	OP2	L -10°-50°	L -10°	L -2°
		R -10°-50°	R -10°	R -2°
UPPER ROOF 1		0°-50°	0°	33°
UPPER ROOF 2		0°-50°	0°	43°
UPPER ROOF 3		0°-50°	0°	27°
UPPER ROOF 4		0°-50°	0°	32°
UPPER ROOF 5		0°-50°	0°	44°
UPPER ROOF 6		0°-50°	0°	28°

As determined using the Procedures specified in S8.13.4.2. Targets BP2* and OP1* are seat belt anchor points.

RECORDED BY: David G. Gotwals

DATE: Janaury 23, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-5
TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXT

VEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite Metallic

VEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	220 mm	180 mm
T°	Horizontal ∠ {CG-F1 (Left Seat) to (Right A-Pillar)}	111.7°	--
A1°	360° - T°	248.3°	--
W°	Horizontal ∠ {CG-2 (Left Seat) to (Left A-Pillar)}	201.7°	--
A2°	A2° = W°	201.7°	--
U°	Horizontal ∠ {CG-2 (Left Seat) to (Left B-Pillar)}	275.9°	--
B1°	B1° = U°	275.9°	--
V°	Horizontal ∠ {CG-R (Left Seat) to (Left B-Pillar)}	197.2°	--
B2°	B2° = V°	197.2°	--
W° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right A-Pillar)}	--	159.0°
A1° (right)	A1° (right) = W° (right)	--	159.0°
T° (right)	Horizontal ∠ {CG-F1 (Right Seat) to (Left A-Pillar)}	--	246.5°
A2° (right)	360° - T° (right)	--	113.5°
V° (right)	Horizontal ∠ {CG-R (Right Seat) to (Right B-Pillar)}	--	162.4°
B1° (right)	B1° (right) = V° (right)	--	162.4°
U° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right B-Pillar)}	--	86.5°
B2° (right)	B2° (right) = U° (right)	--	86.5°
J	A-Pillar {(Plane 3) - (Plane 5)}	326.8 mm	335.4 mm
J/2	J ÷ 2	163.4 mm	167.7 mm
D1	Upper Roof {(Plane A) - (Plane B)}	2485.0 mm	
D1/2	D1 ÷ 2	1242.5 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1194.0 mm	

Measurement	Description	Left Side	Right Side
D2/2	D2 + 2	597.0 mm	
.35D1	.35 x D1	869.8 mm	
.35D2	.35 x D2	417.9 mm	
N	B-Pillar {(BPR) - (lowest point on daylight opening forward of B-Pillar)}	433.4 mm	433.5 mm
N/2	B-Pillar {(BP3) - (lowest point on daylight opening forward of B-Pillar)}	216.7 mm	216.8 mm
N/4	B-Pillar {(BP4) - (lowest point on daylight opening forward of B-Pillar)}	108.4 mm	108.4 mm
Q	O-Pillar {(OPR) - (lowest point on daylight opening)}	450.7 mm	456.1 mm
Q/2	Q + 2	225.4 mm	228.1 mm
D	R-Pilar (Point 7 - Point M)	980.0 mm	980.0 mm
3D/7	3D / 7	420.0 mm	420.0 mm

As determined using the Procedures specified in S10.1-10.13.

SgRP Locations (vehicle coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2086.0	-370.0	797.0	2086.0	370.0	797.0
Rear Row	2901.0	-370.0	834.0	2901.0	370.0	834.0

SgRP Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2085.8	-369.8	796.6	2086.5	370.1	796.8
Rear Row	2900.7	-369.9	833.1	2901.4	370.0	833.3

CG Locations (world coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	2025.8	-369.8	1456.6	2066.5	370.1	1456.8
CGF2	2245.8	-369.8	1456.6	2246.5	370.1	1456.8
CGR	3060.7	-369.9	1493.1	3061.4	370.0	1493.3

REFERENCE FOR VEHICLE COORDINATE SYSTEM:

Driver door striker attachment, upper hold (x, y, z) = (2251, -786, 836)

REMARKS:

RECORDED BY: David G. GotwalsDATE: January 23, 2003APPROVED BY: Helen A. Kalet

TABLE 2-6

SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Dodge Durango SXTVEH. NHTSA NO.: C30305 VIN: 1D4HR38N33F527190 COLOR: Graphite MetallicVEH. BUILD DATE: October, 2002 TEST DATES: January 21-22, 2003TEST LABORATORY: MGA Research CorporationOBSERVERS: Michael Smith, David Gotwals, Scott Kreiger, Louis Campbell

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
A-Pillar Left Side								
AP1	1783.5	-529.0	1533.6			Yes		
REL	1784.3	-543.4	1510.6	216	45		1	No
AP2	1660.0	-589.6	1444.8			Yes		
REL	1646.9	-588.5	1425.0	202	26		1	Yes
AP3	1582.4	-594.9	1369.4	202	40	No		No
A-Pillar Right Side								
AP1	1782.6	527.2	1532.2			Yes		
REL	1773.6	539.9	1510.7	145	45		1	Yes
AP2	1655.7	589.1	1444.6			Yes		
REL	1640.5	584.8	1423.2	159	23		1	No
AP3	1578.9	593.0	1364.0	159	40	No		Yes
B-Pillar Left Side								
BP1	2306.5	-465.1	1592.3	270	25	No		No
BP2	2297.9	-568.9	1368.3	270	9	No		Yes
BP3	2263.5	-617.0	1376.4			Yes		
REL	2250.0	-623.0	1360.4	276	-2		1	No
BP4	2352.3	-665.0	1268.8	215	-6	No		No
B-Pillar Right Side								
BP1	2303.2	469.6	1591.6	90	25	No		Yes

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheros)	Impact (Yes/No)
	x	y	z					
BP2	2289.3	573.5	1365.8	90	9	No		No
BP3	2261.6	617.6	1375.8			Yes		
REL	2244.5	625.6	1358.1	87	-2		1	Yes
BP4	2347.8	670.0	1267.8	145	-6	No		No
Other Pillar Left Side								
OPR	3199.0	-448.5	1622.6					
OP1	3252.1	-591.6	1366.7	270	15	No		No
OP2	3273.3	-633.3	1397.3			Yes		
REL	3294.7	-632.8	1386.3	270	-2		1	No
Other Pillar Right Side								
OPR	3194.5	456.2	1627.7					
OP1	3242.0	603.7	1371.8	90	15	No		Yes
OP2	3268.0	636.6	1400.2			Yes		
REL	3292.5	635.5	1393.3	90	-2		1	No
Rear Pillar Right Side								
RP1	3901.7	501.9	1597.3					No
RP2	4011.4	633.0	1447.4					No
Front Header Left Side								
FH1	1699.4	-408.6	1539.3	180	50	No		No
FH2	1684.9	-258.0	1551.6	180	50	No		No
Front Header Right Side								
FH1	1695.3	407.7	1542.3	180	50	No		No
FH2	1680.2	256.7	1553.9	180	50	No		No
Side Rail Left Side								
SR1	1934.4	-476.7	1577.4	270	28	No		No
SR2(A)	2084.5	-468.9	1591.9	270	26	No		No
SR2(B)	2007.1	-470.8	1588.3	270	24	No		No
SR3A	2456.7	-465.7	1614.5	270	22	No		No
SR3B	3348.6	-481.1	1590.0	270	36	No		No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
Side Rail Right Side								
SR1	1932.4	474.3	1577.1	90	28	No		Yes
SR2(A)	2083.5	465.9	1594.1	90	26	No		No
SR2(B)	2004.0	470.2	1585.9	90	24	No		No
SR3A	2454.0	467.8	1615.1	90	21	No		No
SR3B	3344.5	483.1	1600.4	90	36	No		No
Upper Roof Left Side								
UR1	1999.2	-411.5	1626.7	270	33	No		Yes
UR2	2302.0	-419.2	1605.5	270	43	No		Yes
UR3	3199.3	-415.8	1648.1	270	27	No		No
Upper Roof Right Side								
UR4	2004.2	413.3	1623.9	90	32	No		No
UR5	2306.2	416.2	1606.5	90	44	No		No
UR6	3189.6	414.8	1654.7	90	28	No		No

As determined using the Procedures specified in S10.1-10.13.

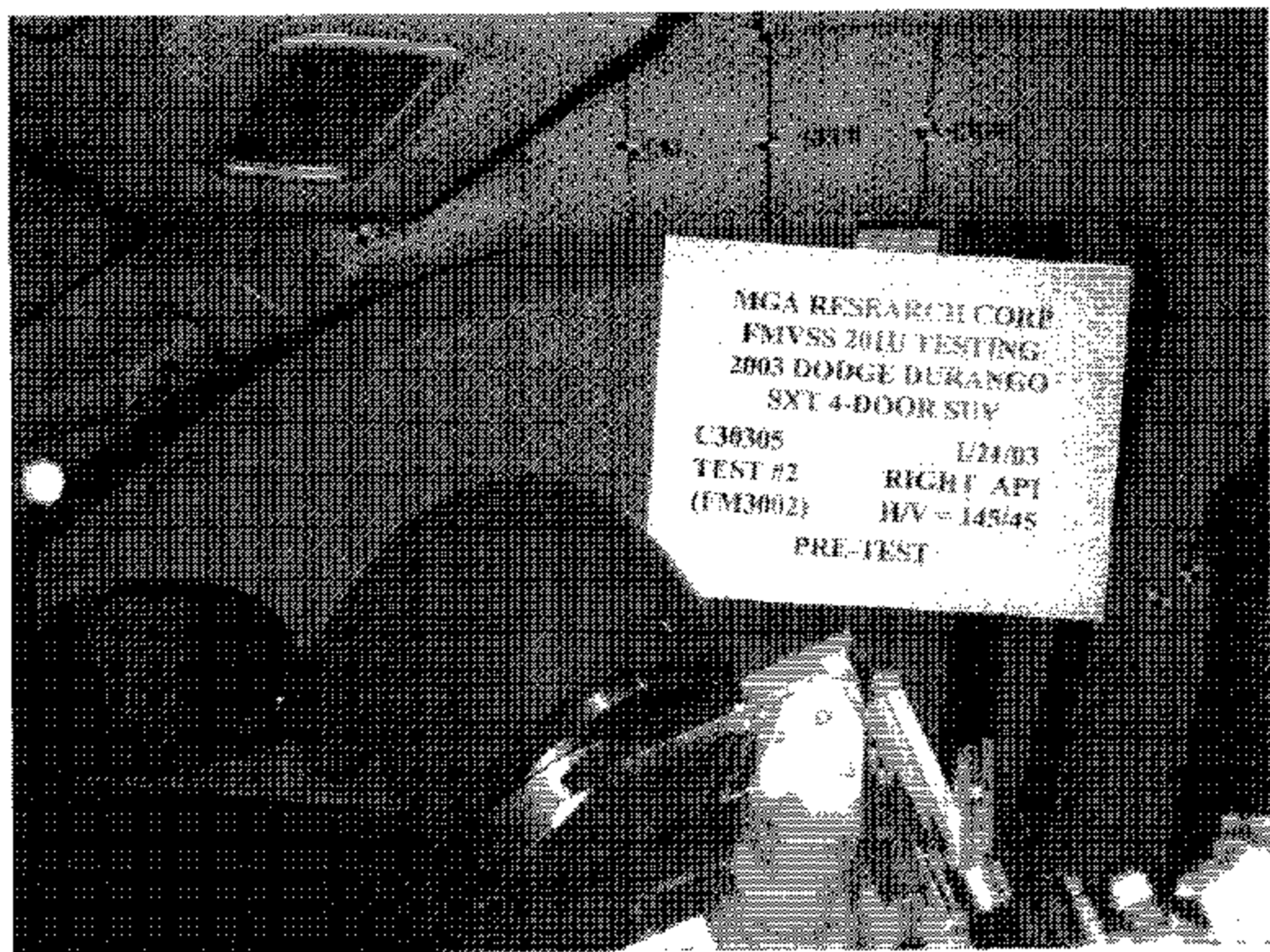
REMARKS: The horizontal and vertical approach angles listed in this table are the impact angles judged by the test engineer most likely to give high HIC(d) values.

Targets RP1, RP2, and RH (left and right side) were found to be located greater than 600 mm rearward of the rearmost seating reference point (SgRP). These targets are therefore exempt from testing.

RECORDED BY: David G. Gotwals

DATE: January 23, 2003

APPROVED BY: Helen A. Kalet



MGA RESEARCH CORP
FMVSS 201C TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/31/03

TEST #2 RIGHT AP1

(FM3002) H/V = 145/45

POST-TEST

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305

1/21/03

TEST #2

RIGHT API

(FM3002)

H/V = 145/45

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES. MGATP201U_FRAME #2.3

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C3305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango

GENERAL TEST PARAMETERS:

Test Number: 2

Target (Vehicle Side): left API

Temperature: 72 EDC

MGA Test Reference No: FM3002

Humidity: 72 %

Approach Angles: Horizontal 145 °

Time of Test: 12:18 am pm

Vertical 45 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left <u>Right</u> Pt. O
699	706	7.5	23.3	18	25

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>Y</u>	<u>5</u>	<u>J35923</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35916</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35919</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: [Signature] Date: 1/21/03

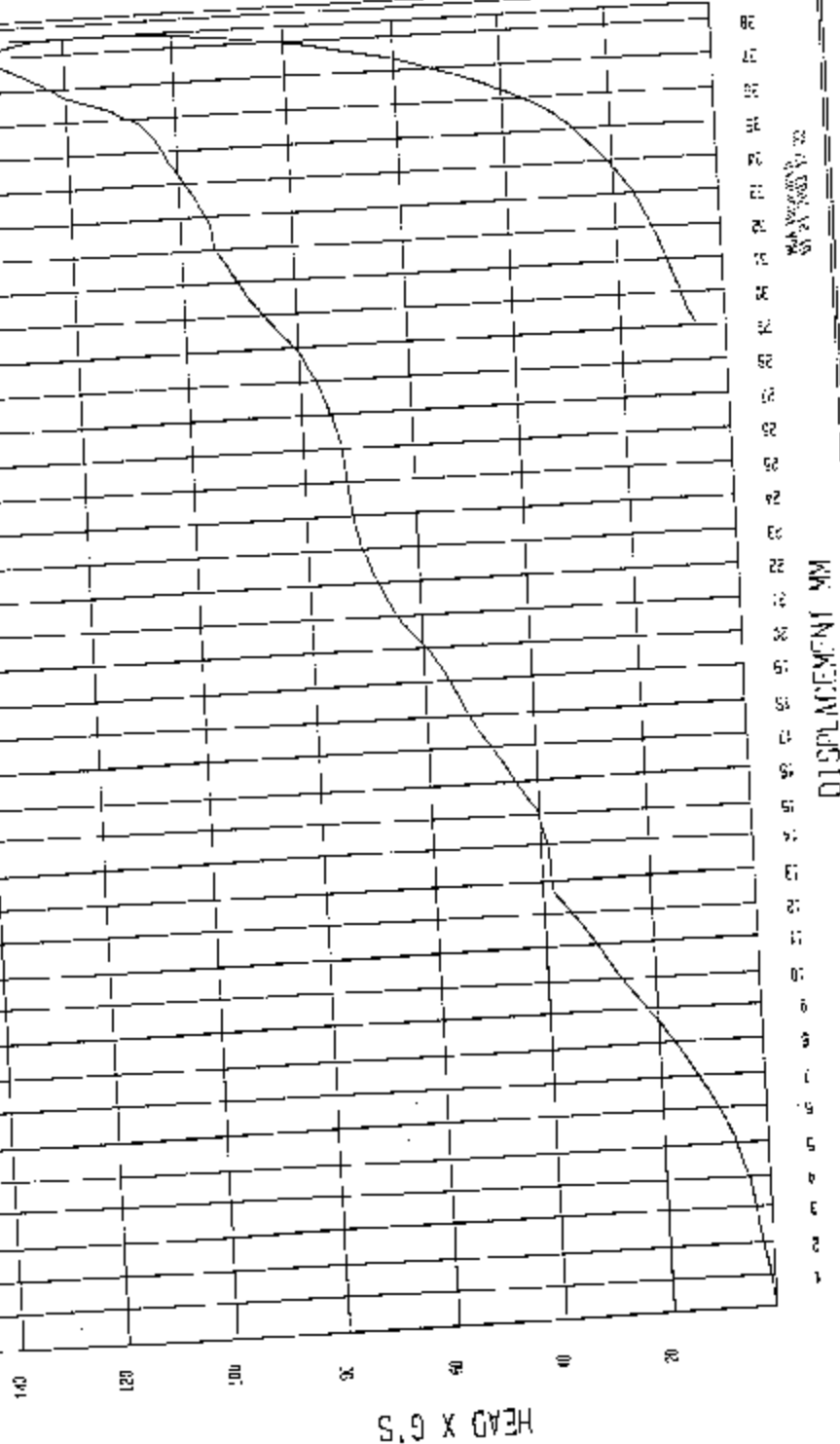
*Only necessary for NHTSA (Government) Compliance testing.

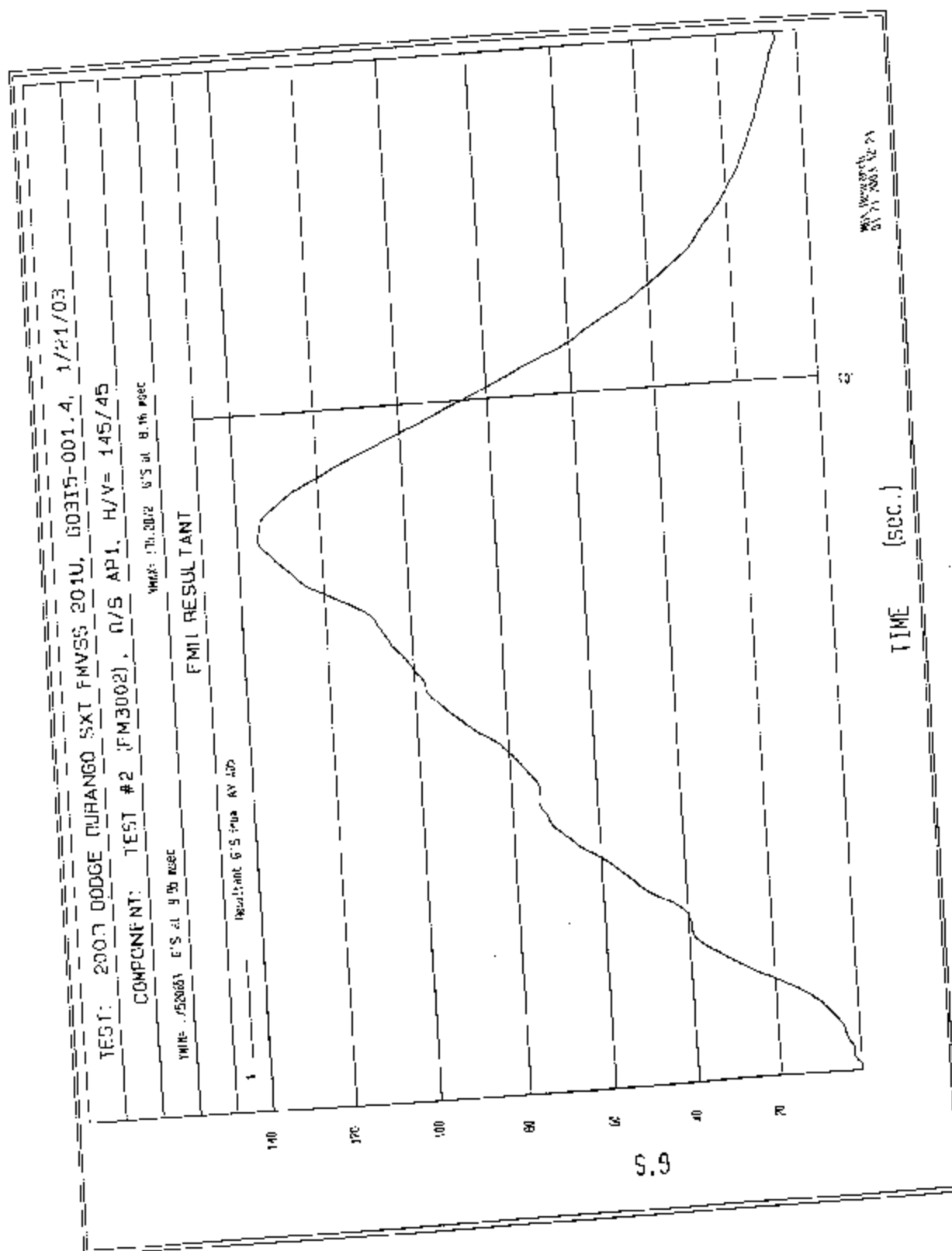
```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \NHTSA\FM3002AV.A05
The HIC = 706.38 calculated over 7.5 msec
T1 = 3.19 msec T2 = 10.66 msec
*****
HIC(d) = 639
Impact Velocity = 23.3 (kph)
```

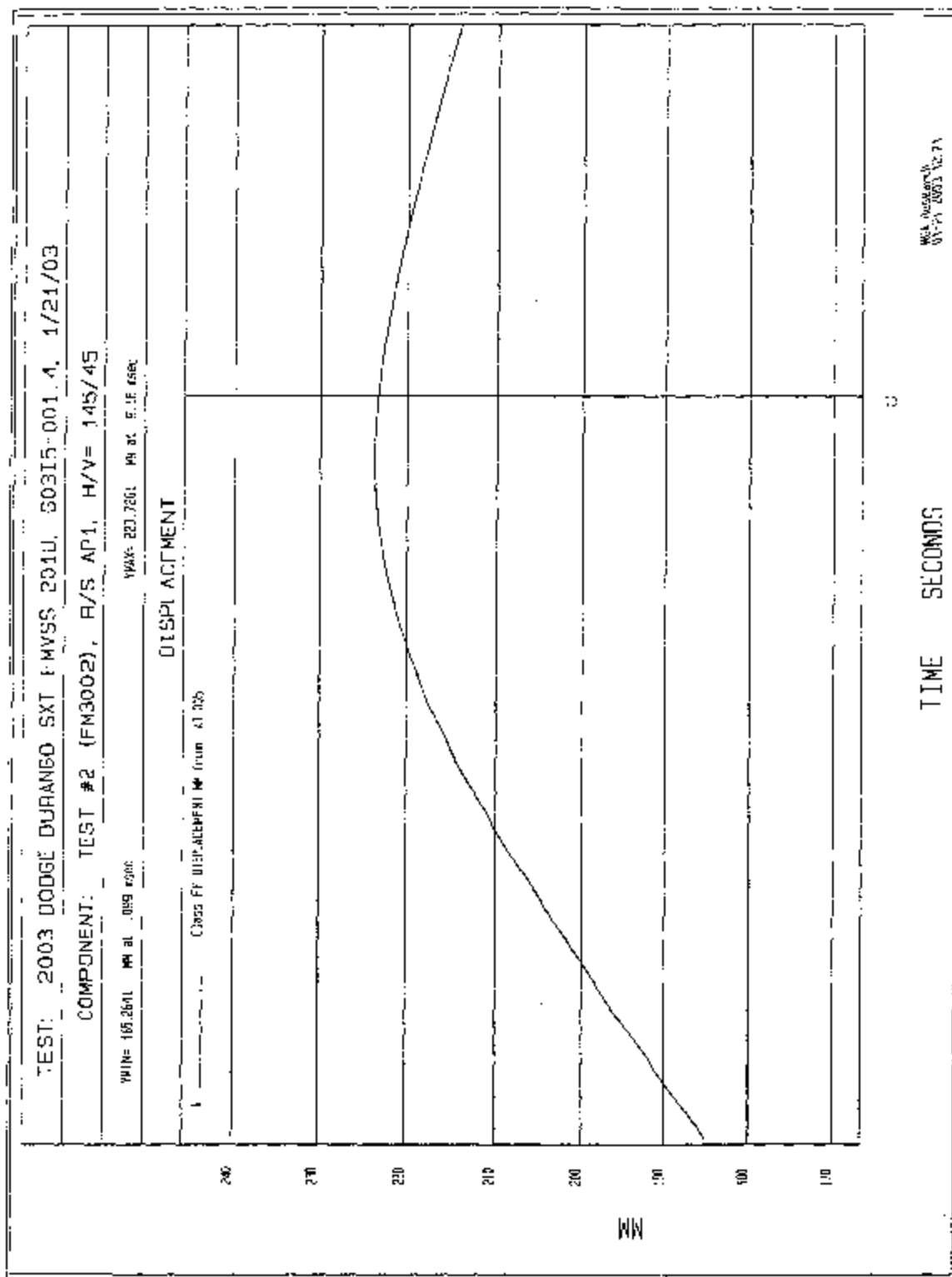
TEST: 2003 DODGE DURANGO SXT FMVSS 2010, G0315-001.4, 1/21/03

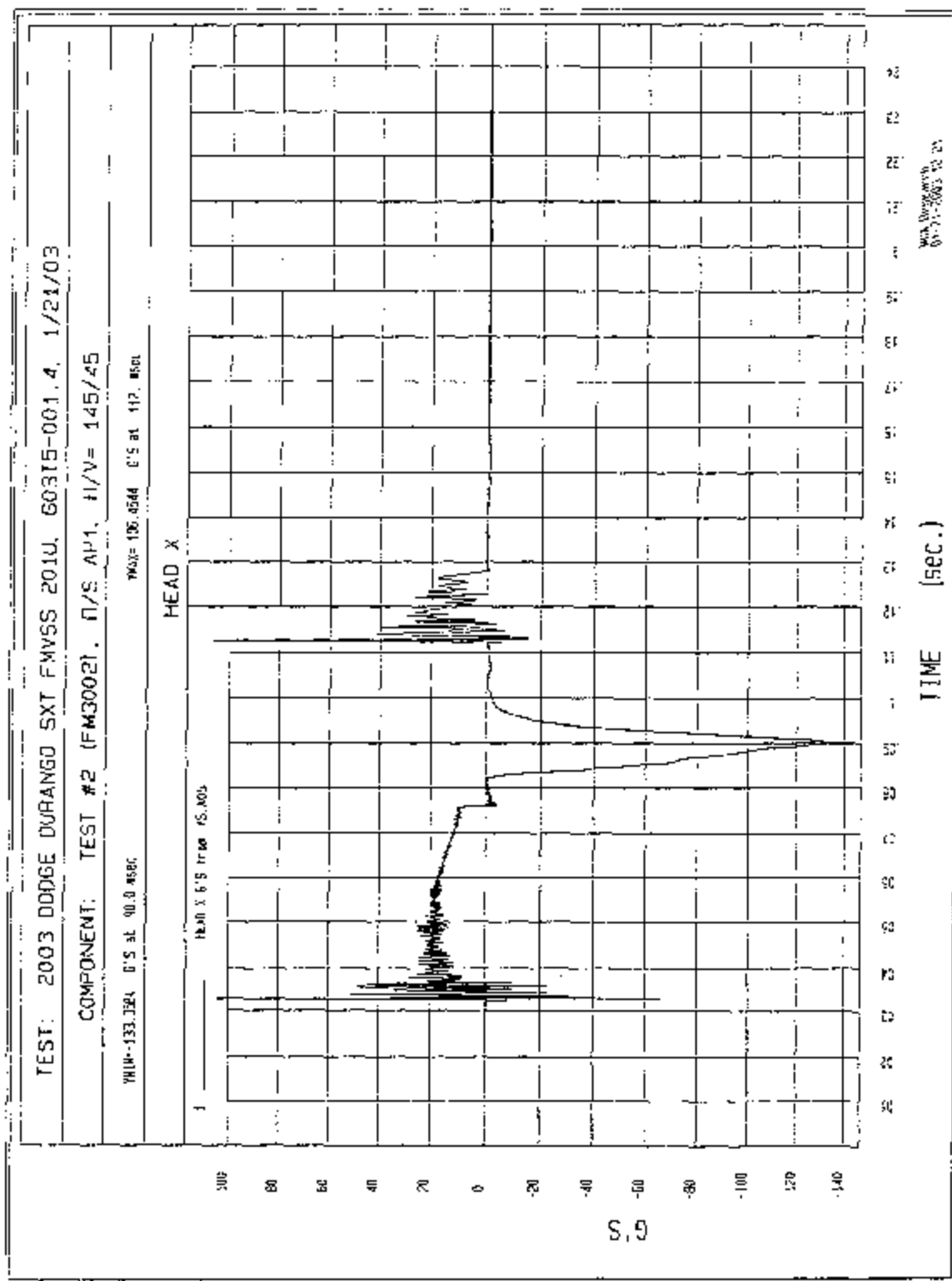
COMPONENT: TEST #2 (FM3002), R/S N.Y. H/V- 145/45

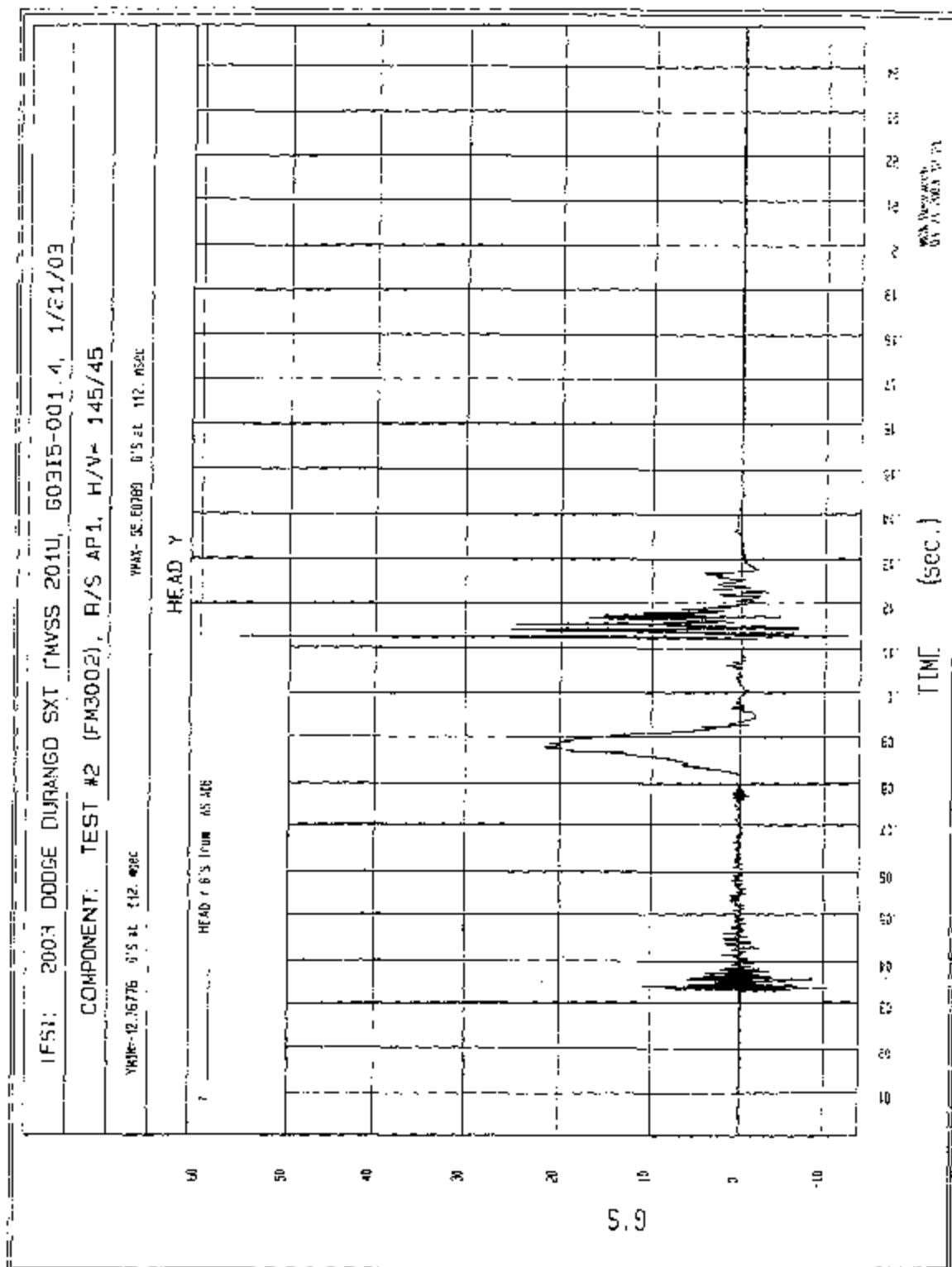
HEAD X as a function of DISPLACEMENT

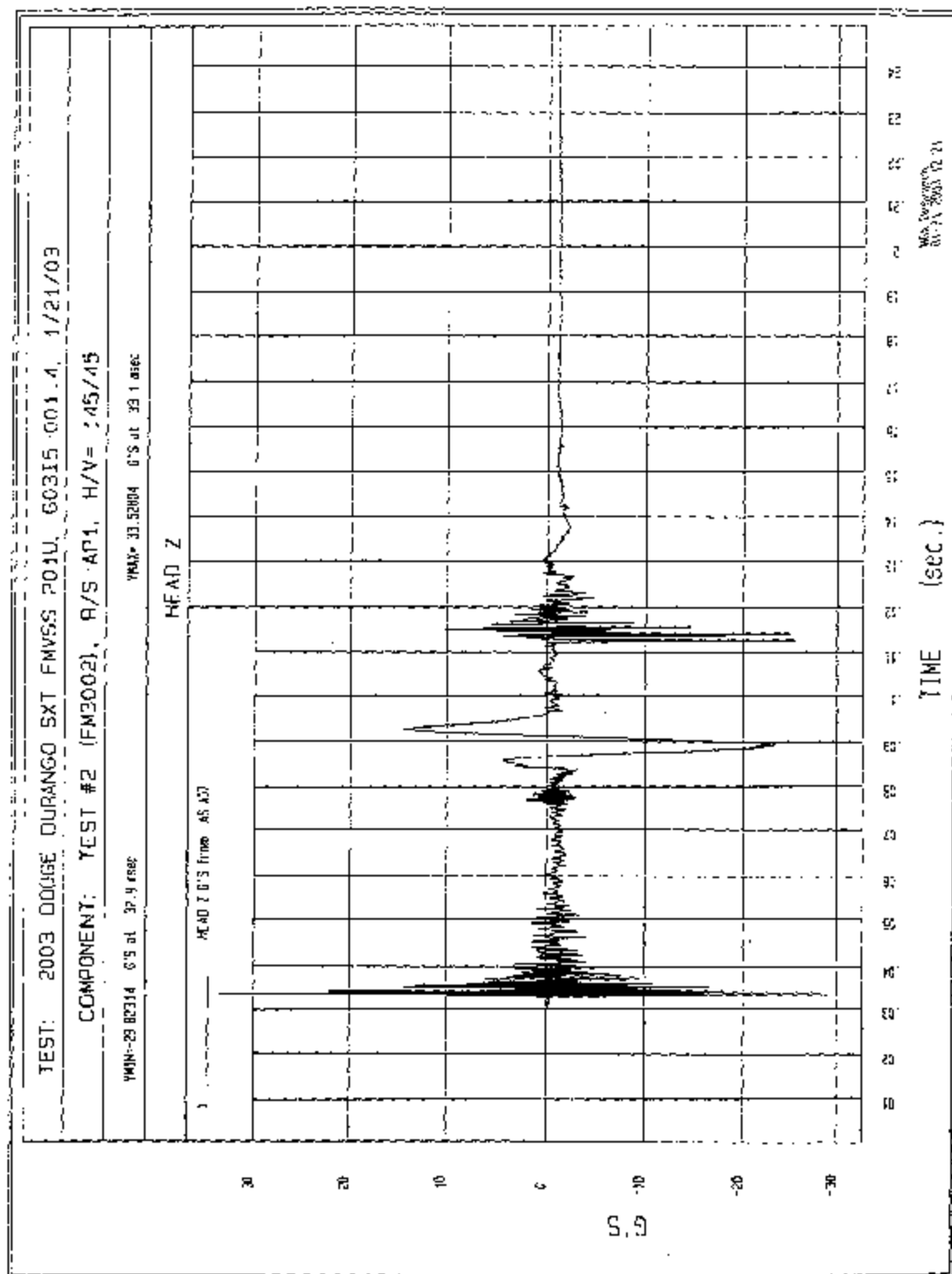












TEST: 2003 DODGE DURANGO SXT FMVSS 2010, G0315-C01.4, 1/21/03

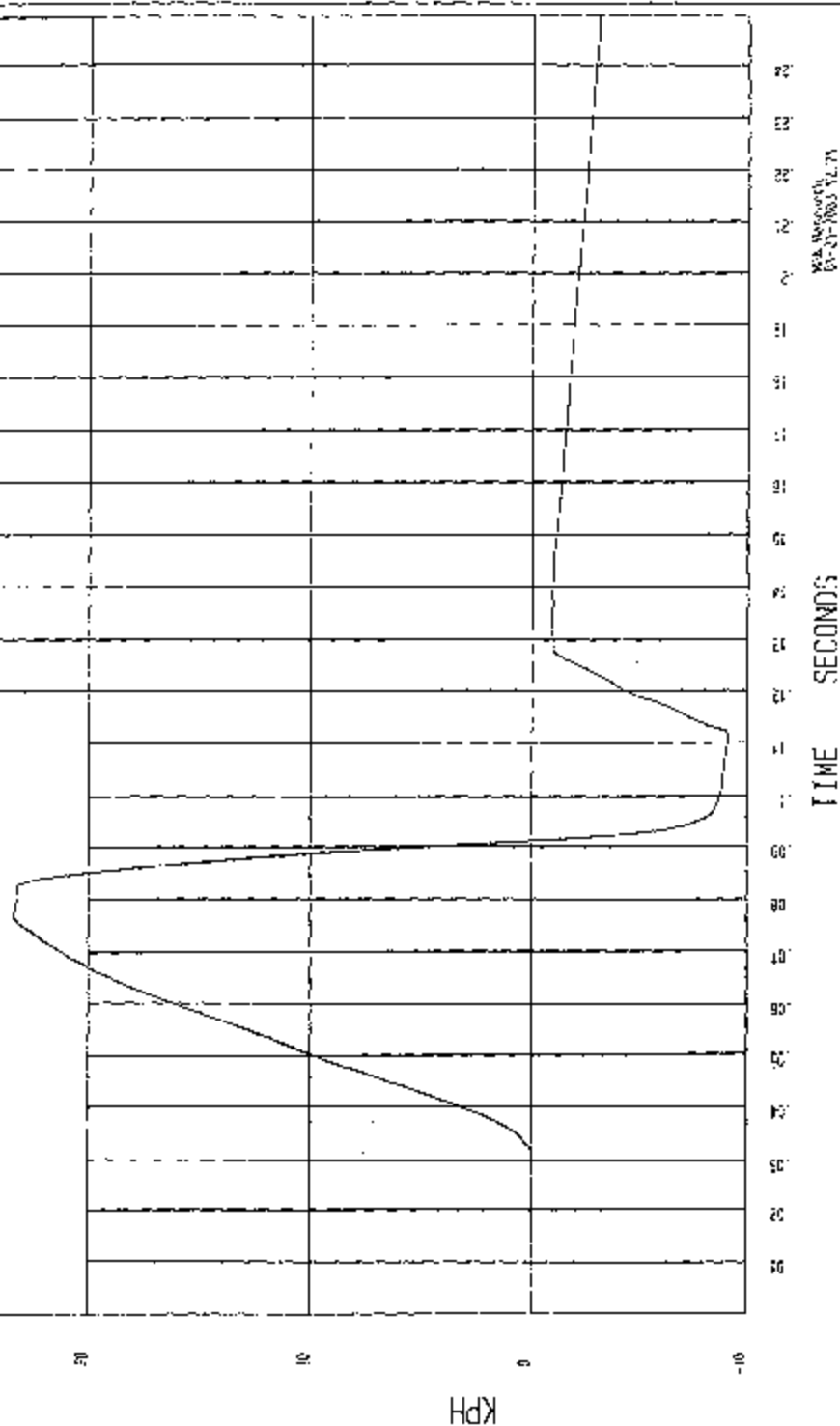
COMPONENT: TEST #2 (FM3002), R/S AP1, II/V= 145/45

WJ4--9 10867 KPH at 131. sec

YMAX= 23.40932 KPH at 76.6 msec

VELOCITY

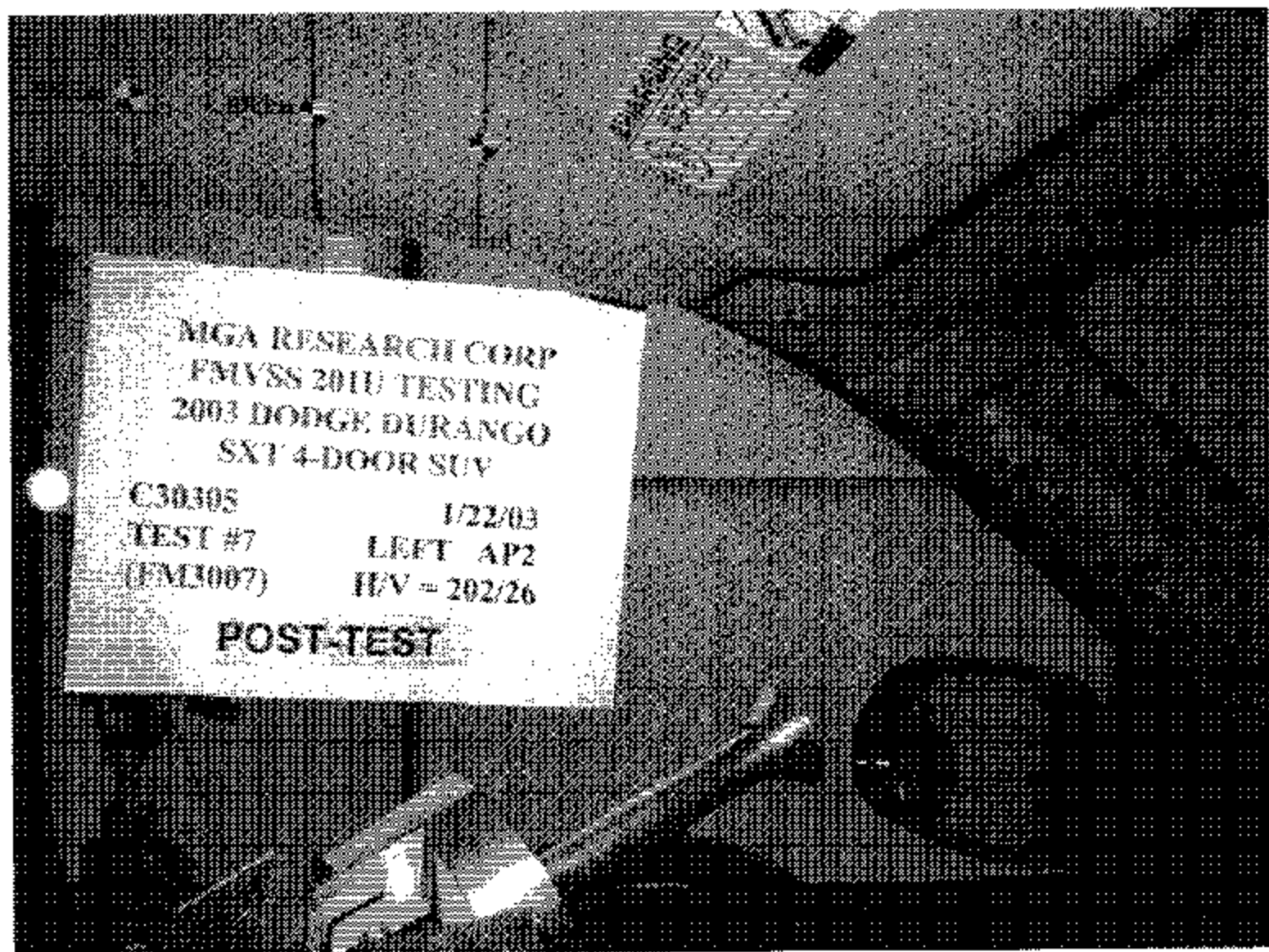
1 Class F Velocity KPH True 0.005



WJ4--9 10867
03-07-003 12.75

MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

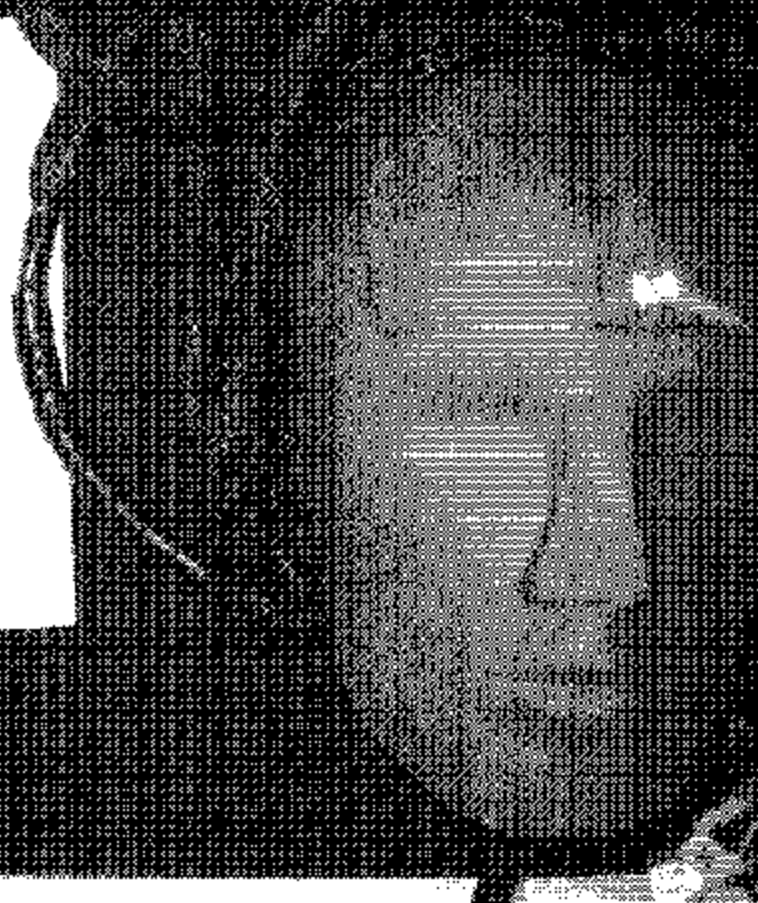
C30305 1/22/03
TEST #7 LEFT AP2
(FMV3007) H/V - 202/26



MGA RESEARCH CORP
FMVSS 2011 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #7 LEFT APZ
(FM3007) DIV = 202/26

POST-TEST



MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGATP201U_FRAME #3.3

DOC NO.: MGATP201U_FRAME #2
REVISION NO.: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C3025 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

GENERAL TEST PARAMETERS:

Test Number: 7

Target (Vehicle Side): Left: AP2

Temperature: 22 °C

MGA Test Reference No.: FM3007

Humidity: 22 %

Approach Angles: Horizontal 202 °

Time of Test: 9:47 (am/pm)

Vertical 26 °

FMH Serial No: 35

TEST RESULTS:

HIC(c)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
387	293	10.7	23.8	12	12

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	93.1	1.21	1.21
Y	6	J35919	93.3	1.23	1.23
Z	7	J35951	95.1	1.51	1.51

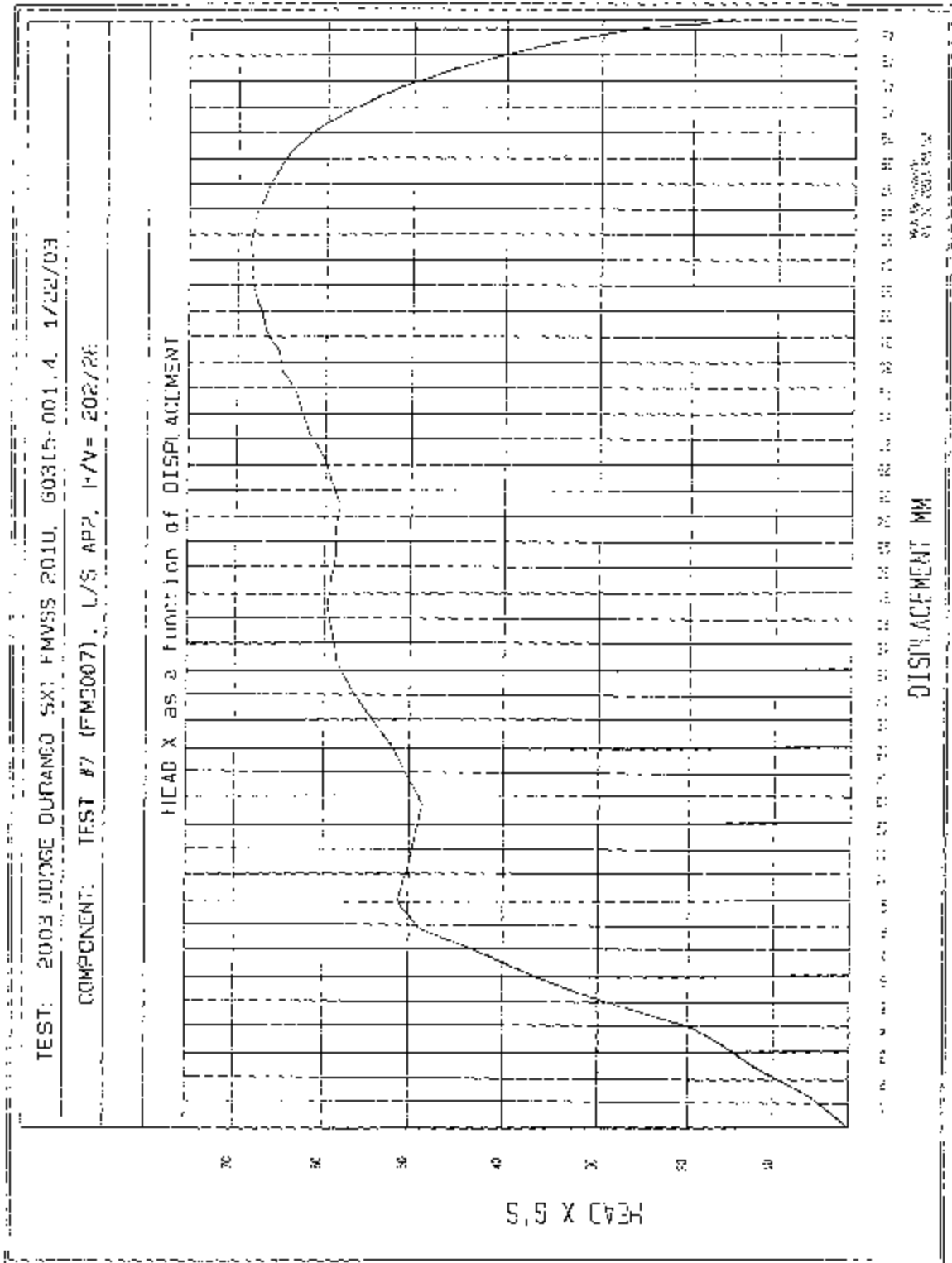
REMARKS (Summary of test: damage, non-compliance, invalid test, etc.):

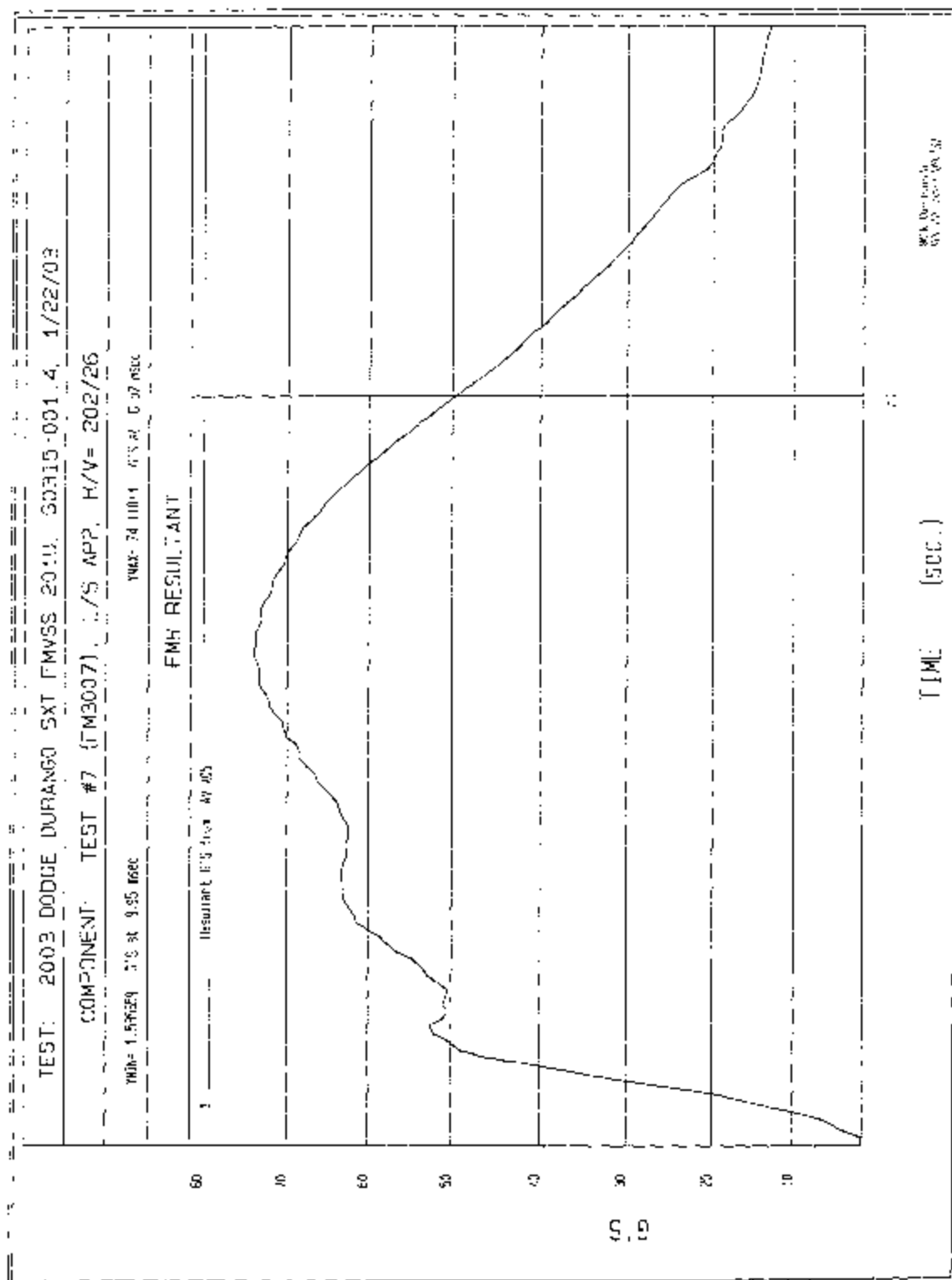
THE GRAB HANDLE WAS BENT DURING TESTING.

Recorded By: [Signature] Approved By*: [Signature] Date: 1/22/03

*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3007AV.A05
HIC = 292.95 calculated over 10.4 msec
T1 = .90 msec T2 = 11.25 msec
*****
HIC(d) = 387
Impact Velocity = 23.8 (kph)
```





TEST: 2003 DODGE DURANGO SX5 FMYSS 2011, C02J5-CC1 A, 1/22/03

COMPONENT: TEST # / (FMYC07), L/S AP2, H/V = 202/26

WIP: 158, 653 NW at 229 msec

YMO- 231.5040 PR # 14.4 6036

DISPLACEMENT

1 _____ CLASS PT DISTANCE IN INCH AT 150

240

220

200

180

160

140

120

100

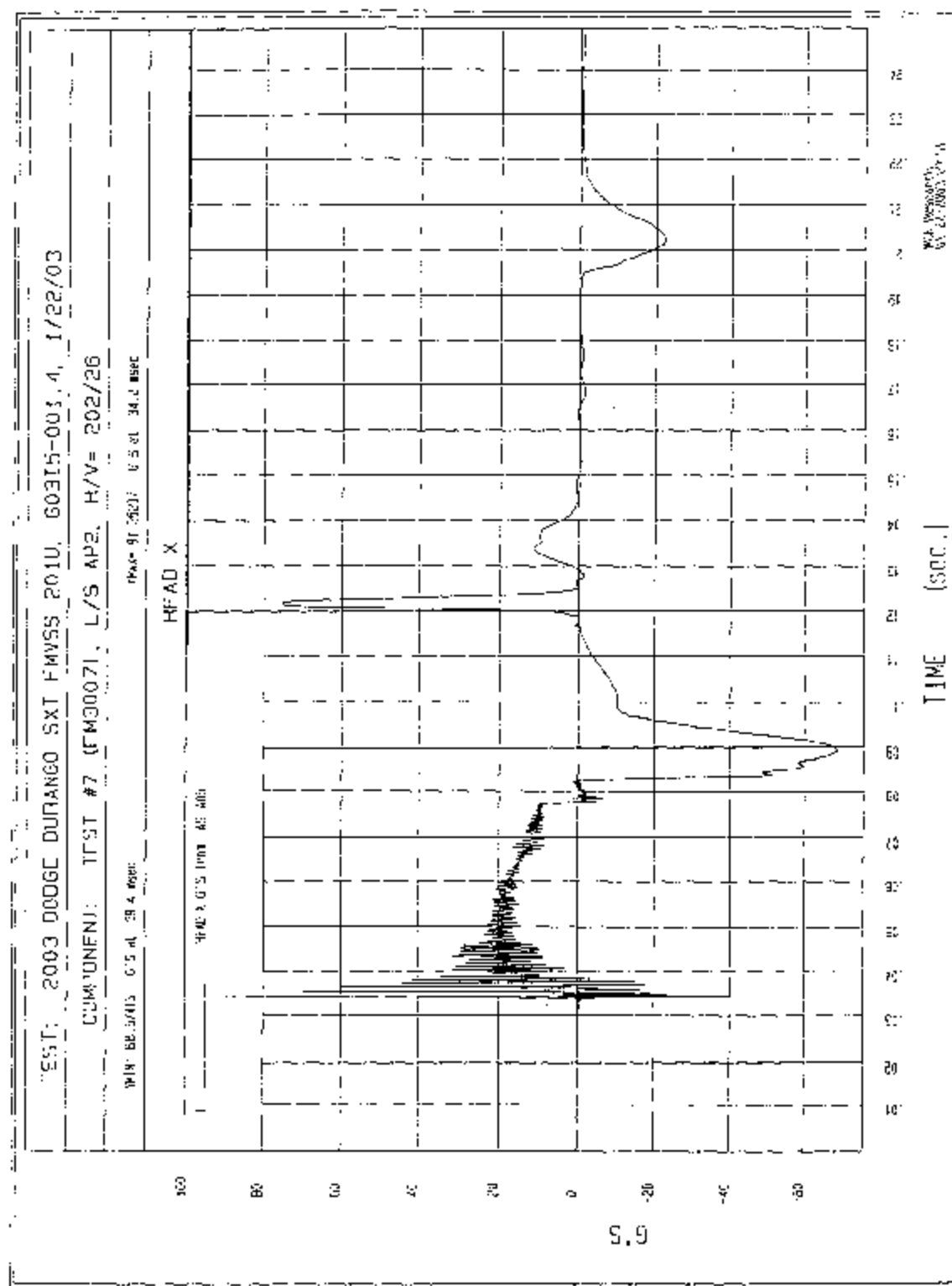
80

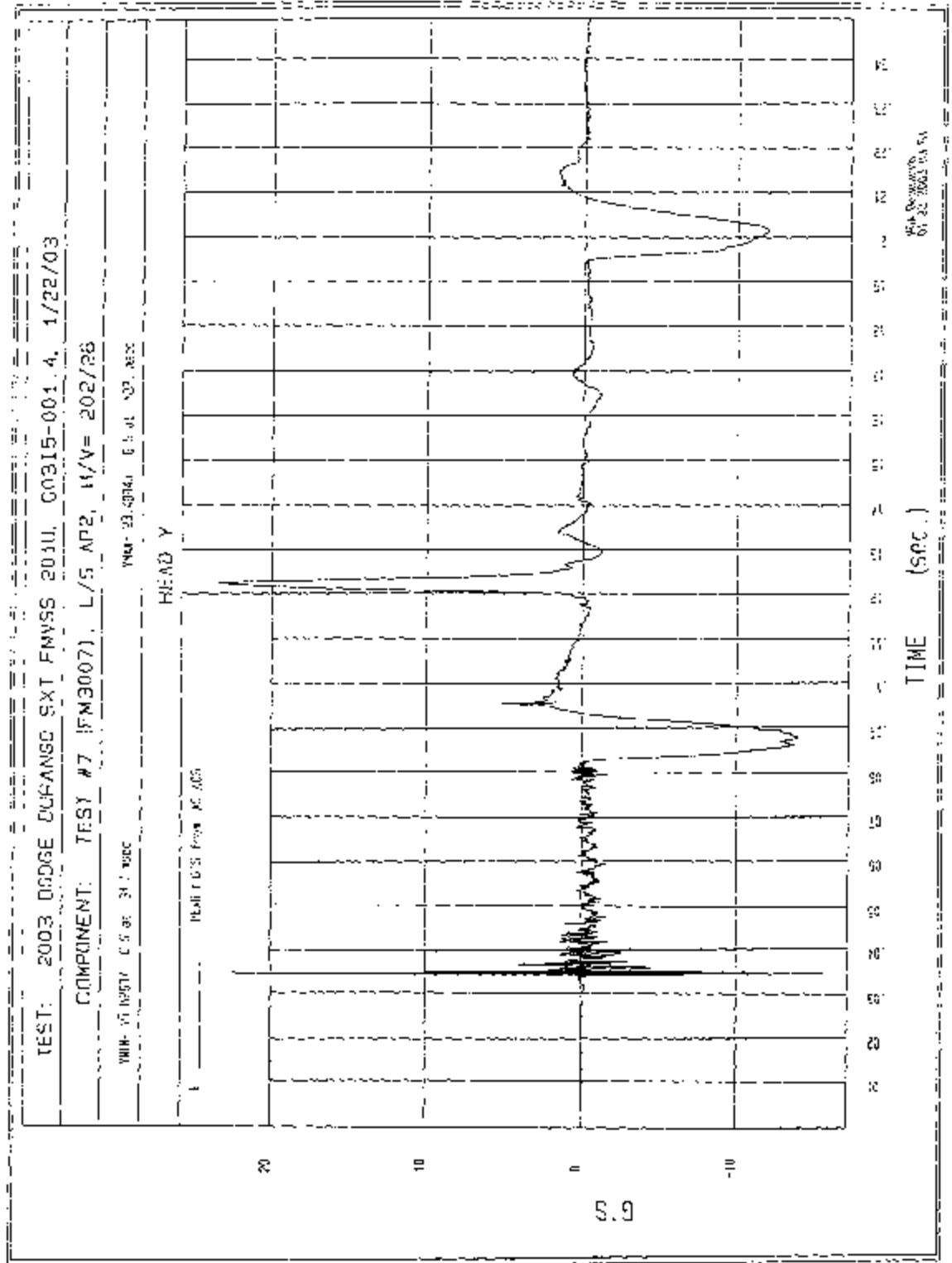
MM

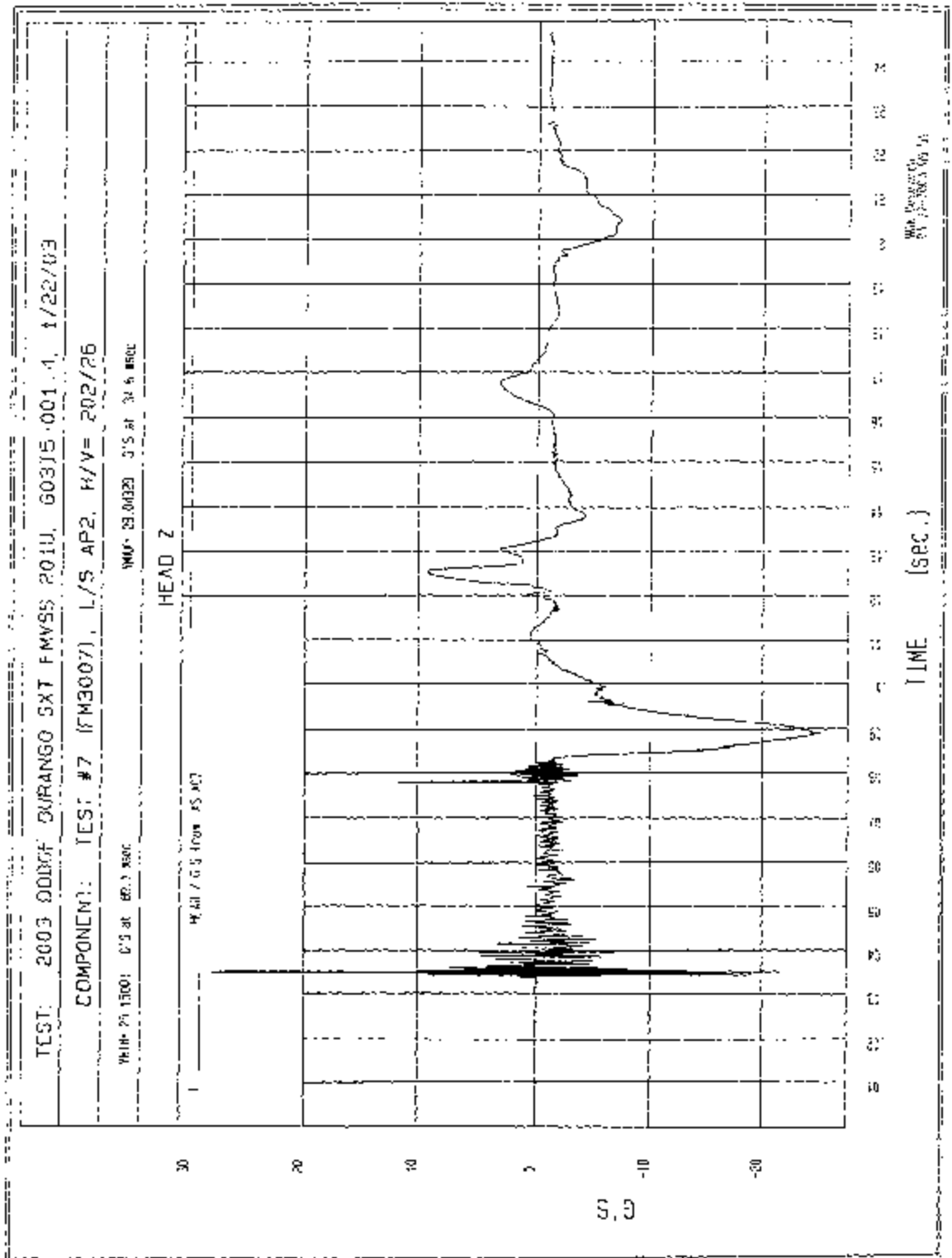
TIME SECONDS

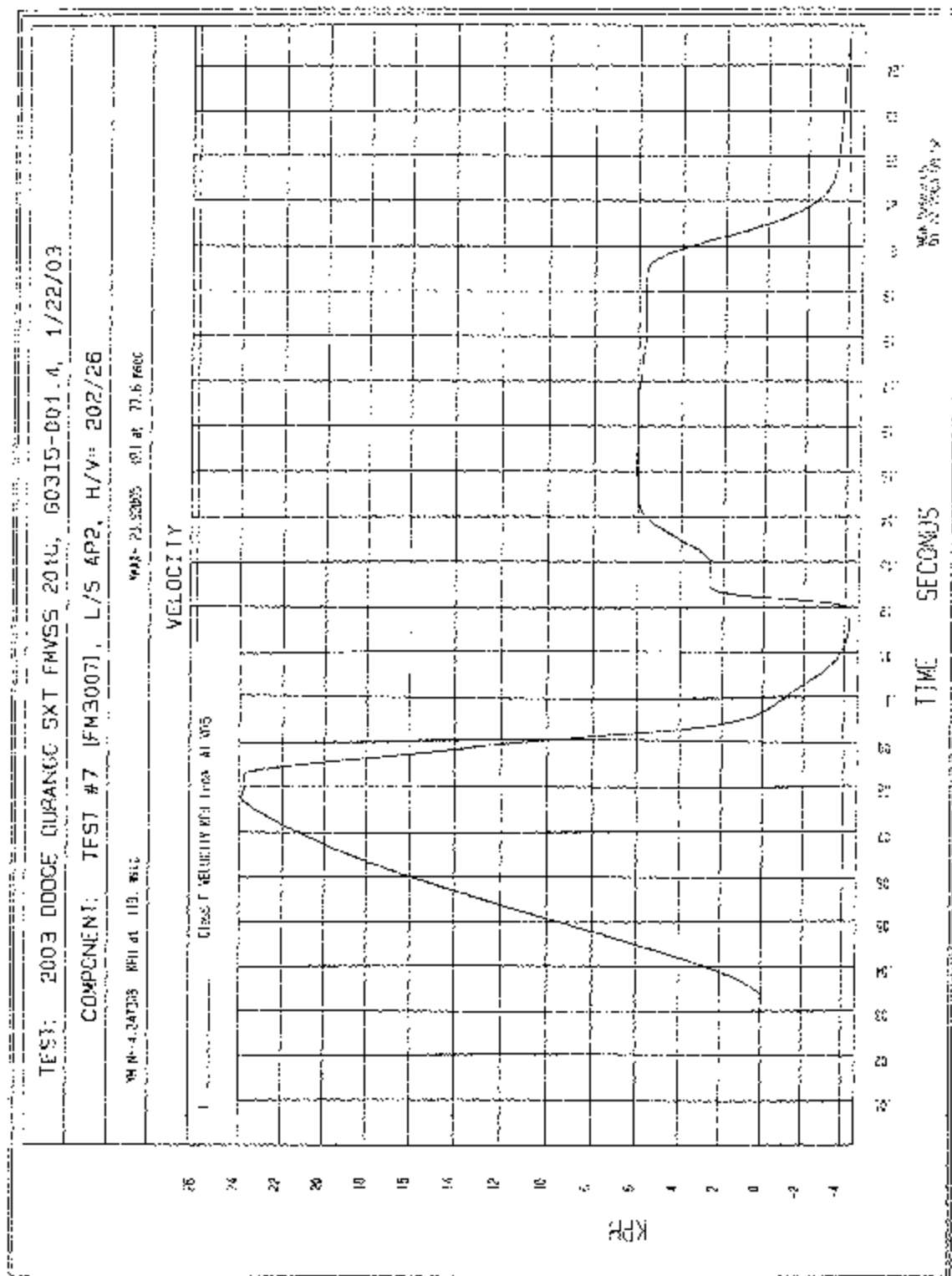
20

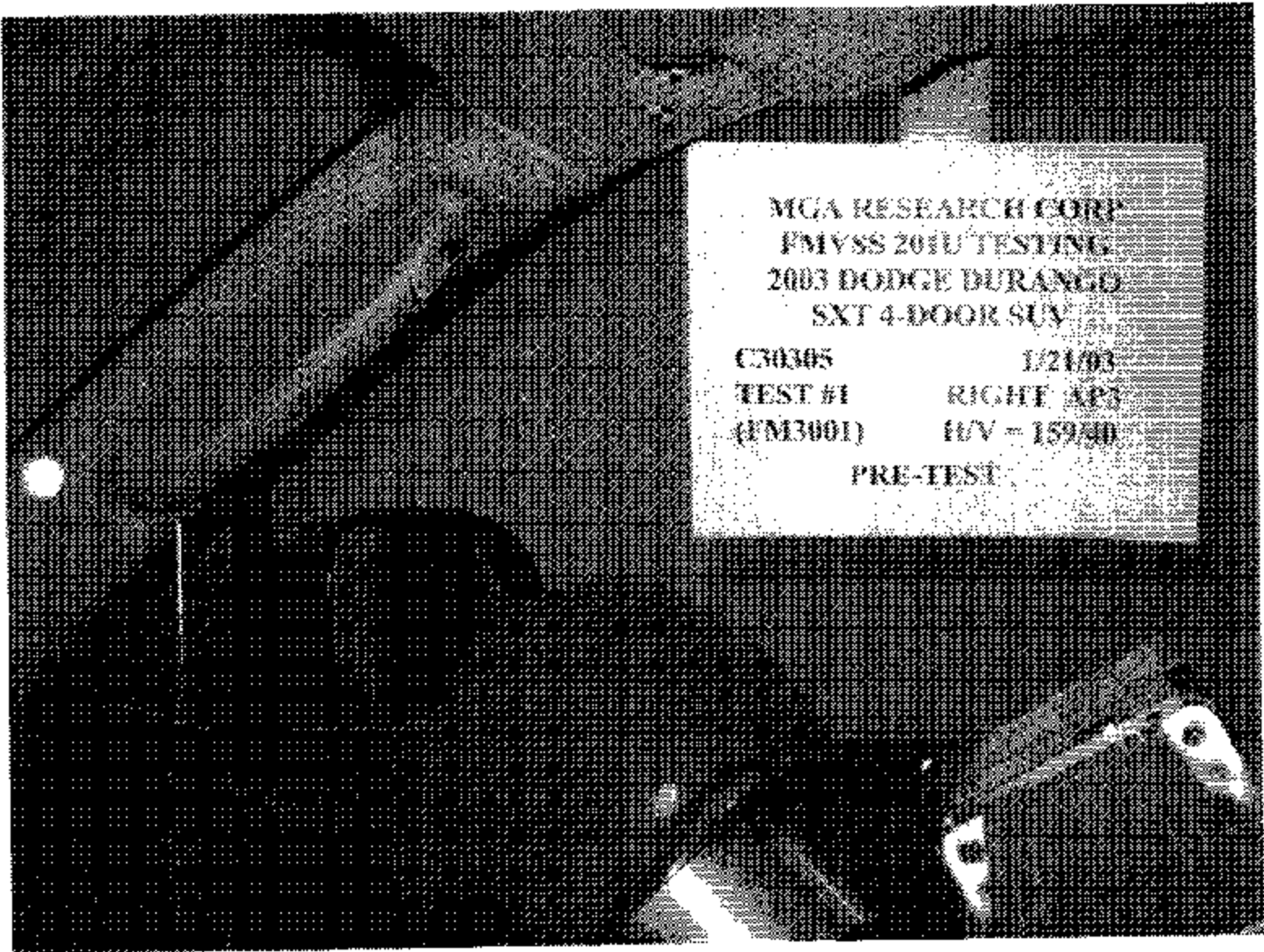
WIP: 158, 653 NW at 229 msec







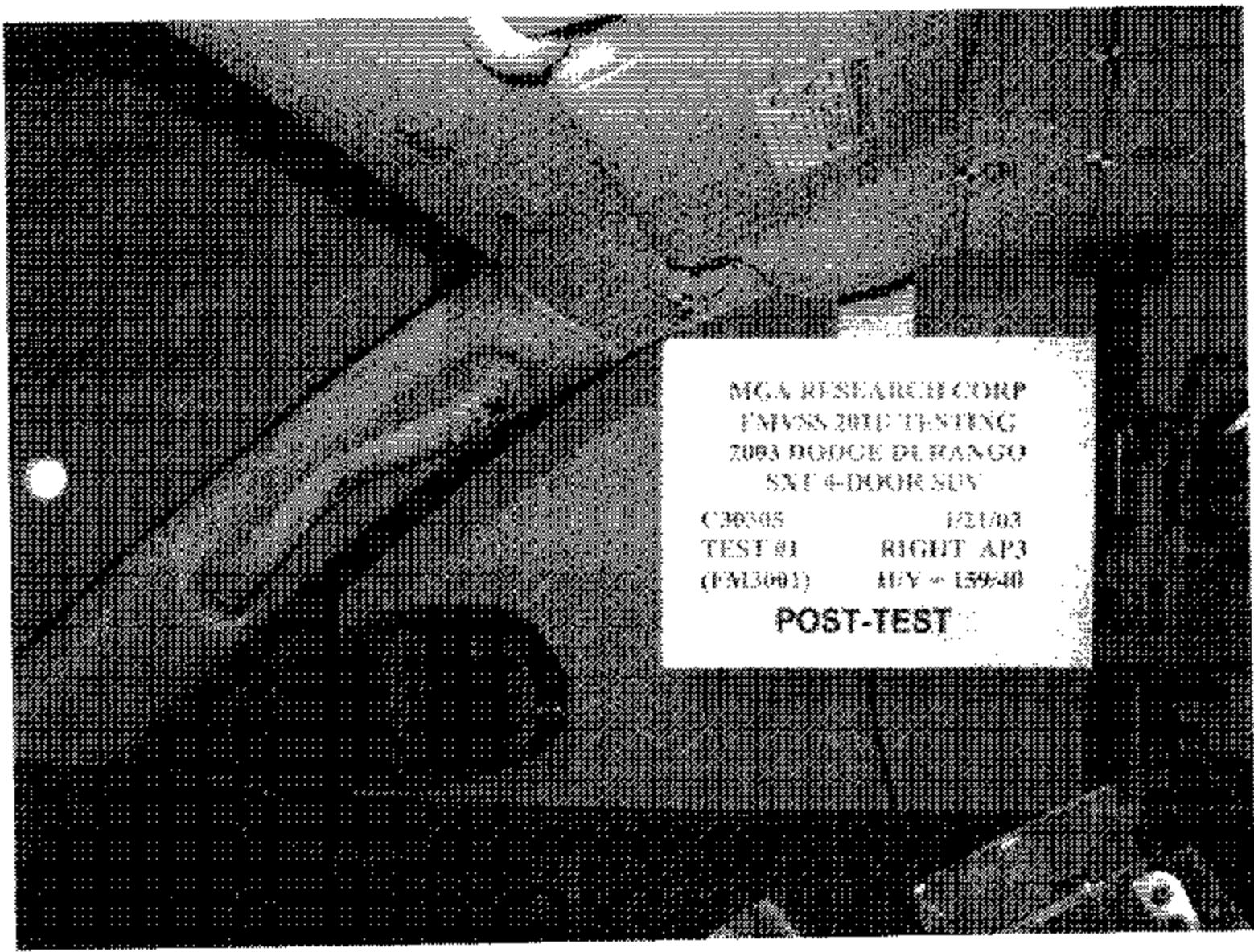




MGA RESEARCH CORP
FMYSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #1 RIGHT AP3
(FM3001) H/V = 159/40

PRE-TEST



MGA RESEARCH CORP
FMVSS 201C TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #1 RIGHT AP3
(FAL3001) BUY - 15940

POST-TEST

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305

1/21/03

TEST #1
(FM3001)

RIGHT AP3
H/V = 159/40

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGA1P201U_FRAME #2.3

DOC. NO.: MGA1P201U_FRAME #2
REVISION NO.: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C30305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango SRT

GENERAL TEST PARAMETERS:

Test Number: 1

Target (Vehicle Side) left/right: Left AP3

Temperature: 20 °F (C)

MGA Test Reference No.: FM3001

Humidity: 25 %

Approach Angles: Horizontal 159 °

Time of Test: 11:46 (am/pm)

Vertical 40 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	dt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>496</u>	<u>437</u>	<u>6.9</u>	<u>23.9</u>	<u>3</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>T3524</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>T3519</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>T31051</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

ASSET HANDLED WAS BEST DURING TESTING

Recorded By: [Signature] Approved By*: [Signature] Date: 1/21/03

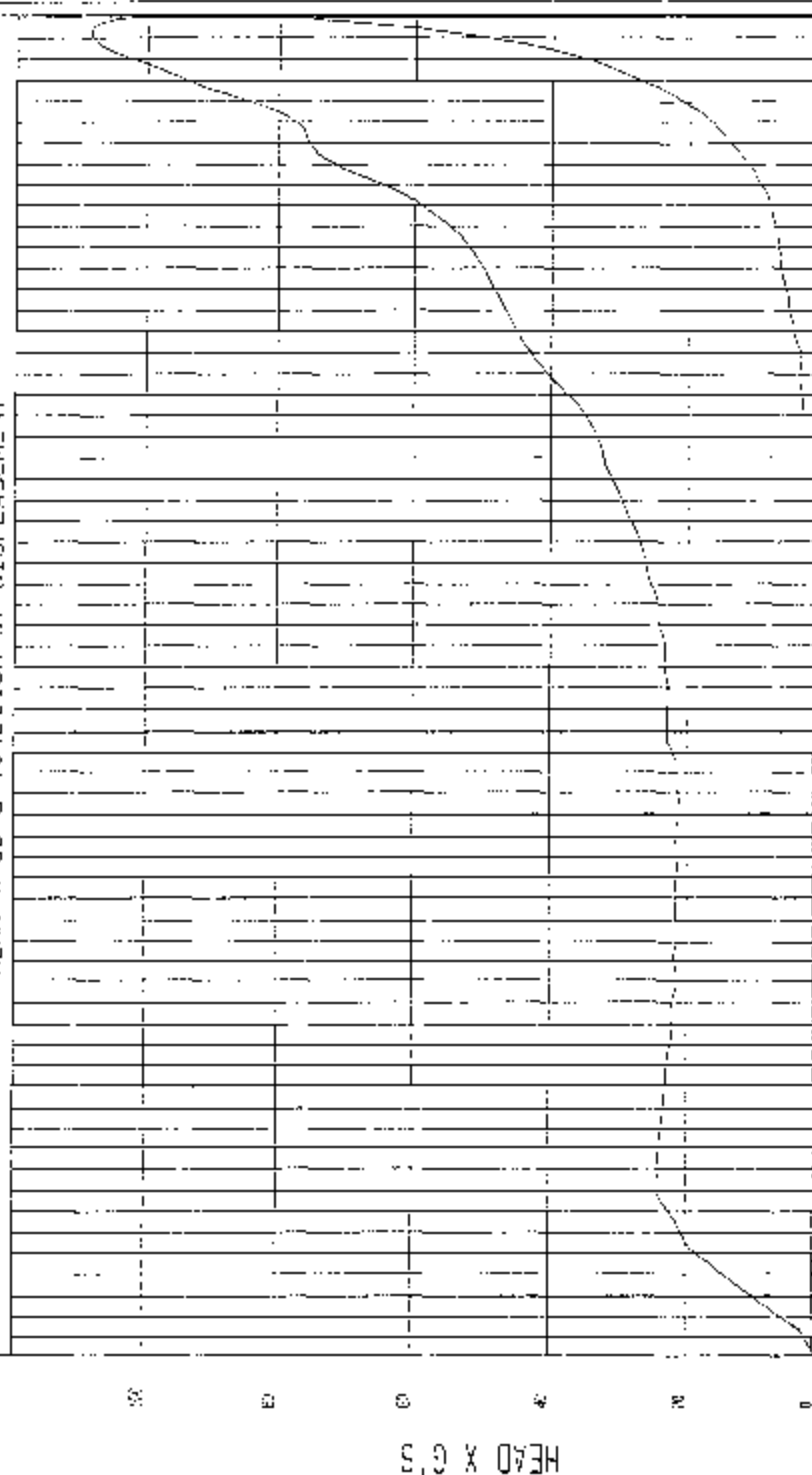
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3001AV.A05
. HIC = 436.60 calculated over 6.9 msec
T1 = 9.16 msec T2 = 16.04 msec
*****
HIC(d) = 496
Impact Velocity = 23.9 (kph)
```

TEST: 2003 DODGE DURANGO SXT FMY35 201U, 60315-001.4, 1/21/02

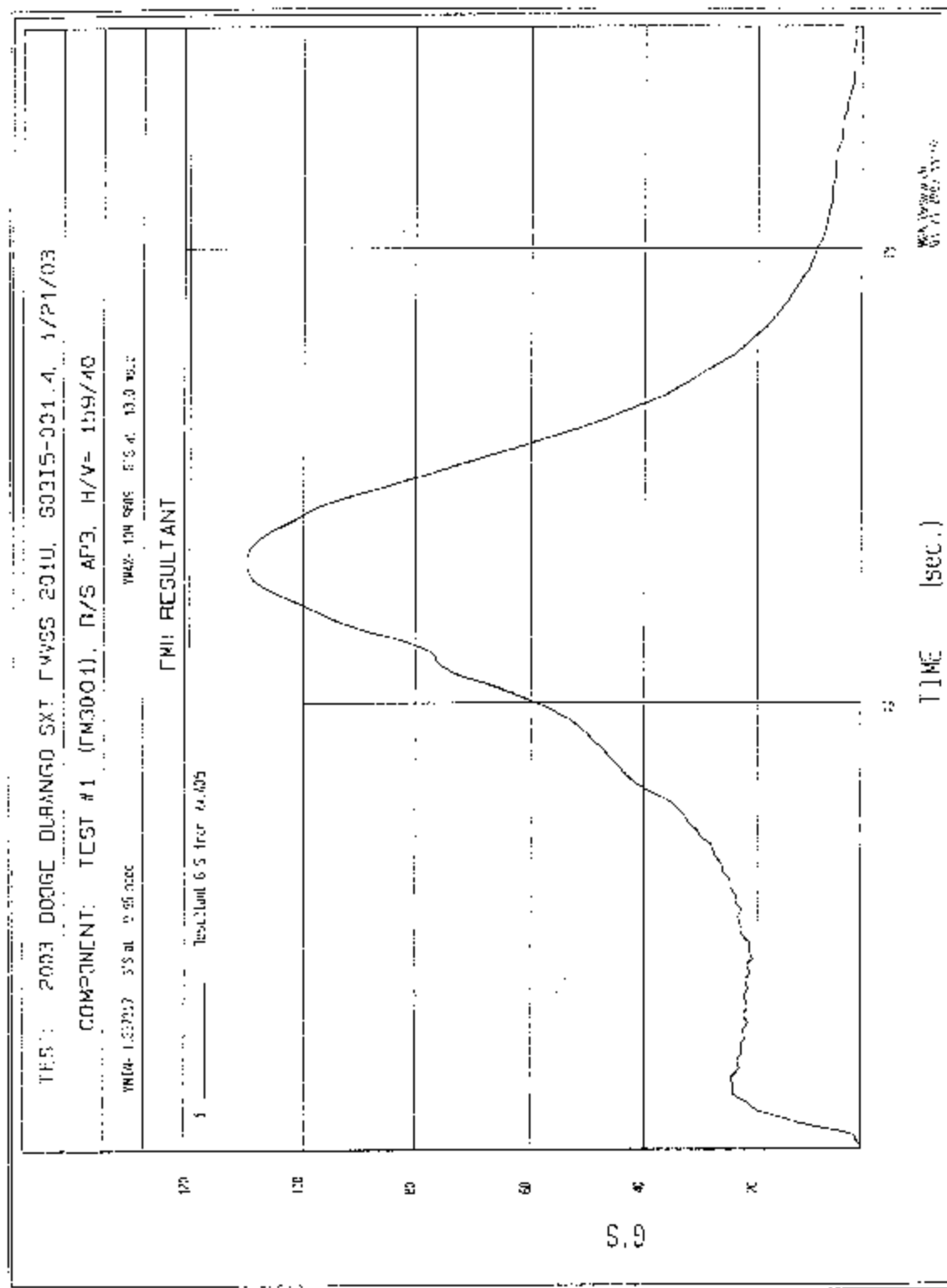
COMPONENT: TEST #1 (FMS001), R/S AP5, H/V= 159/70

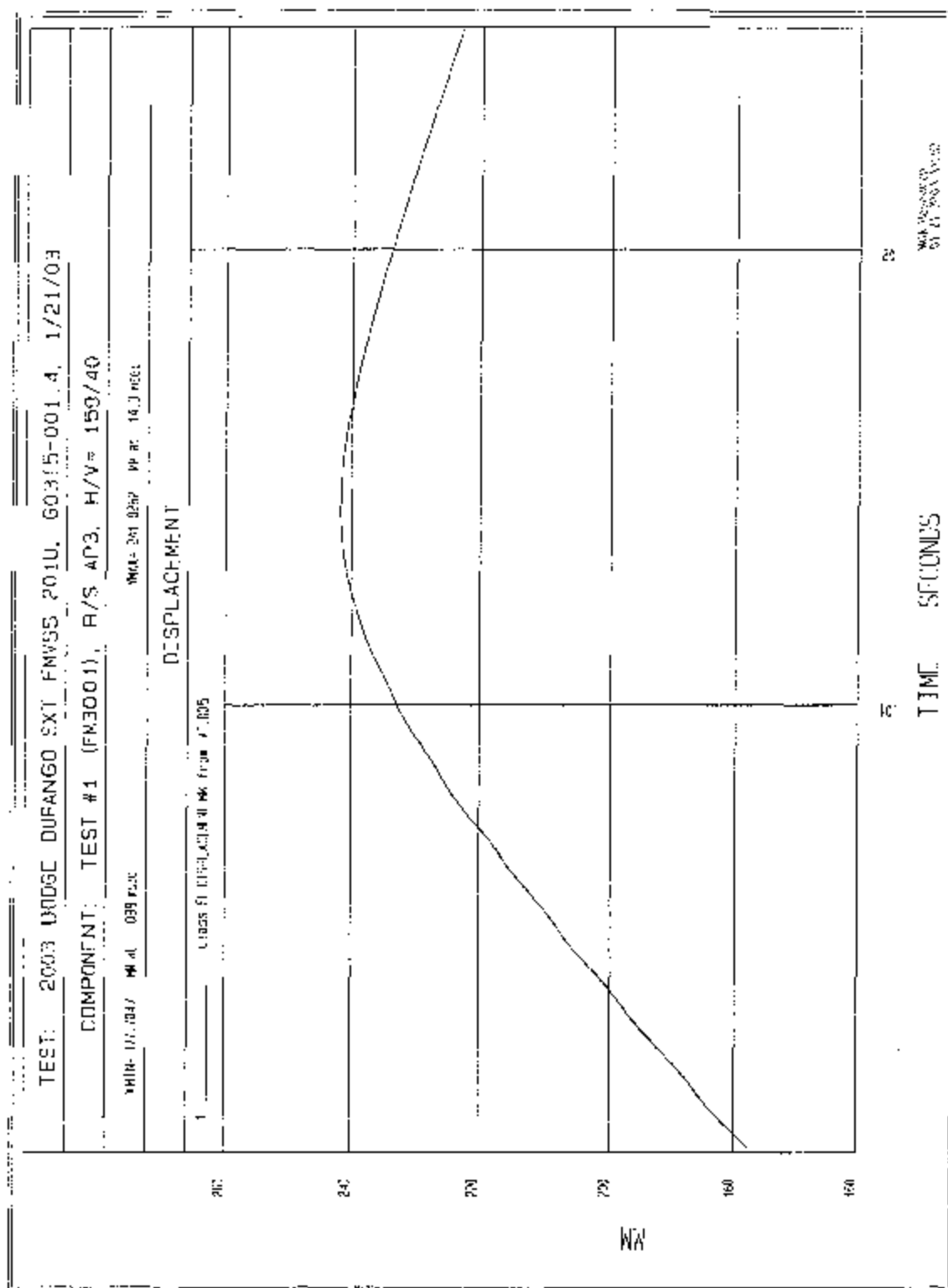
HEAD X as a function of DISPLACEMENT

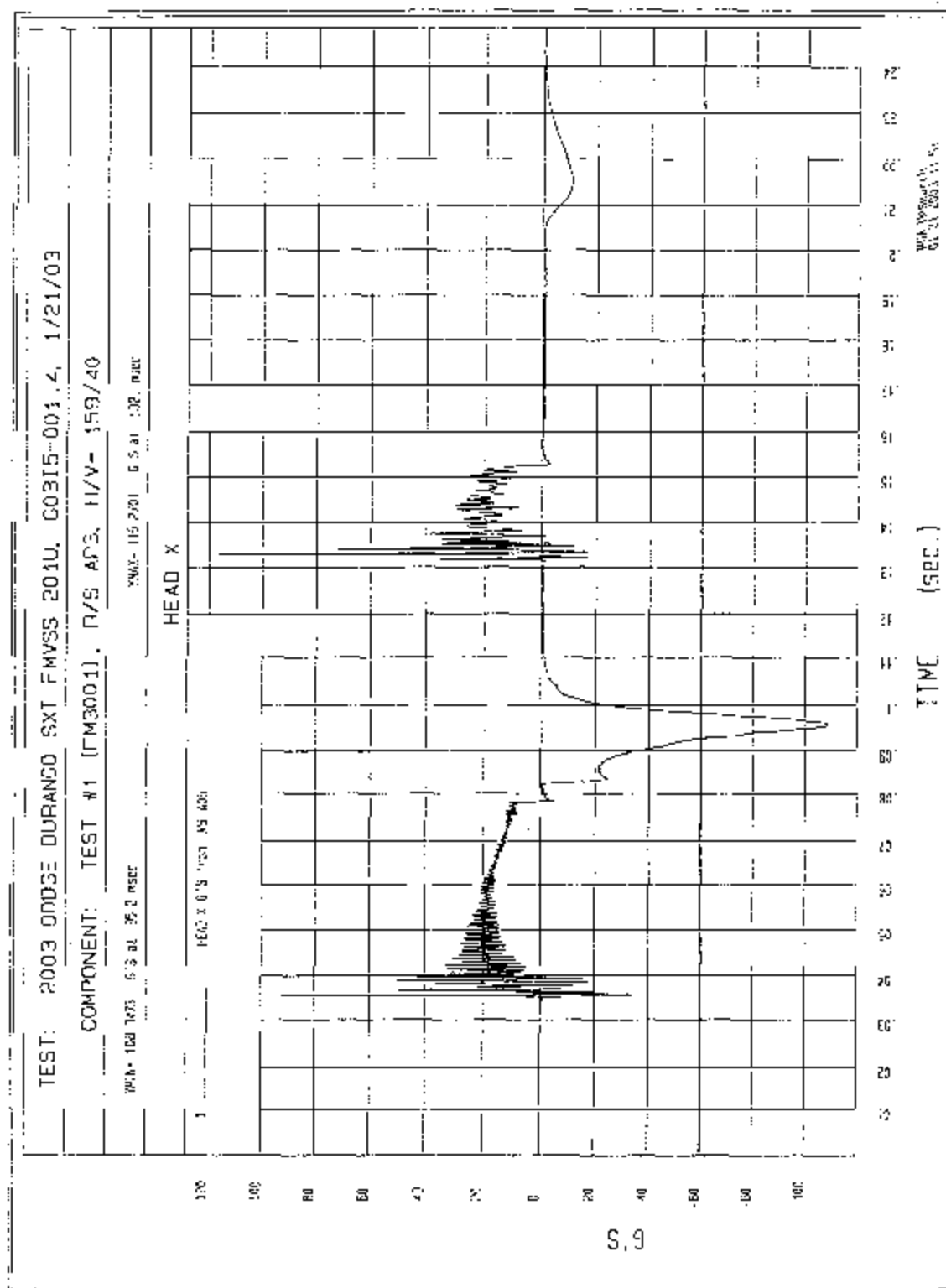


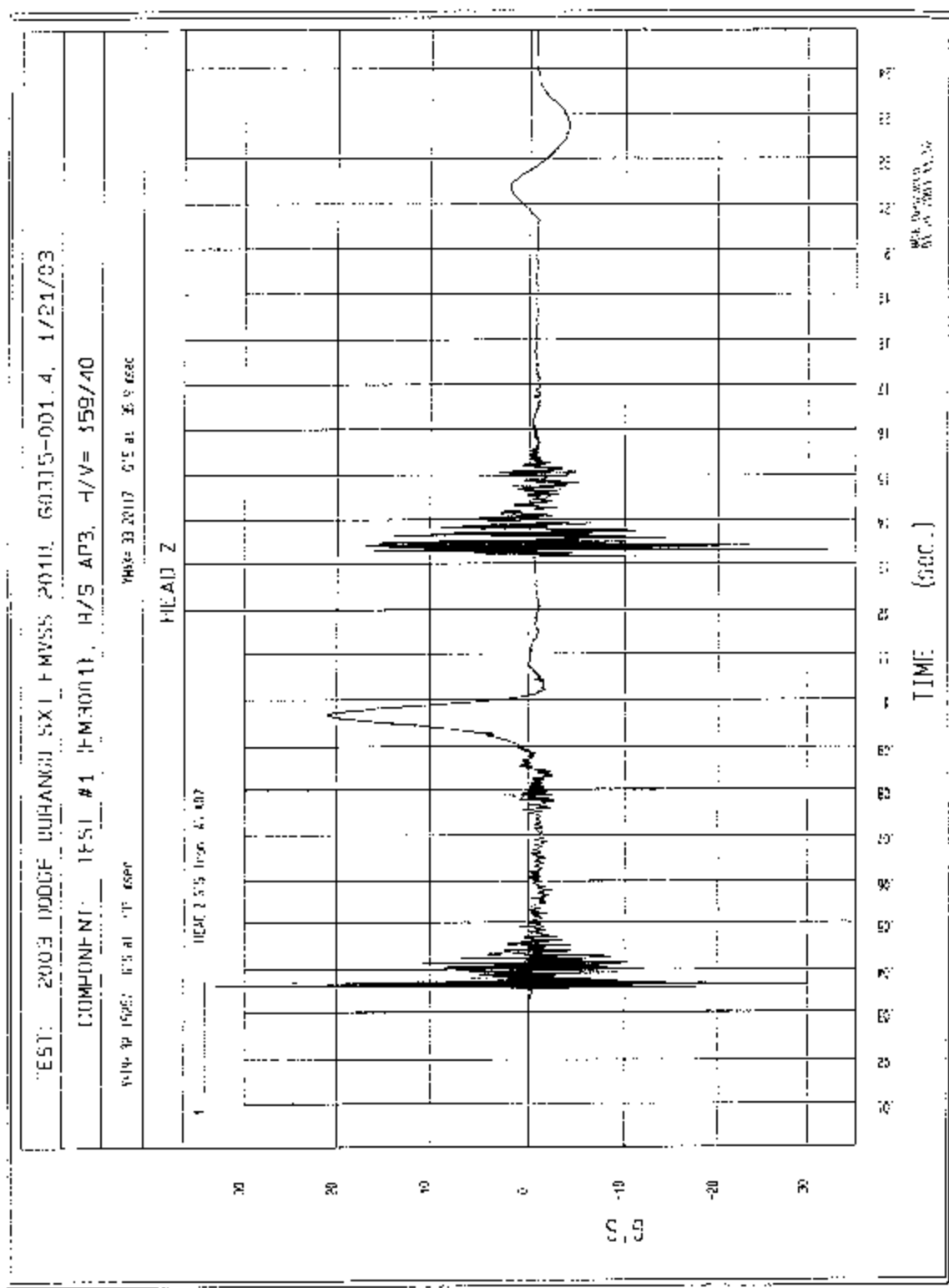
WIA Document
01/21/2003 11:32

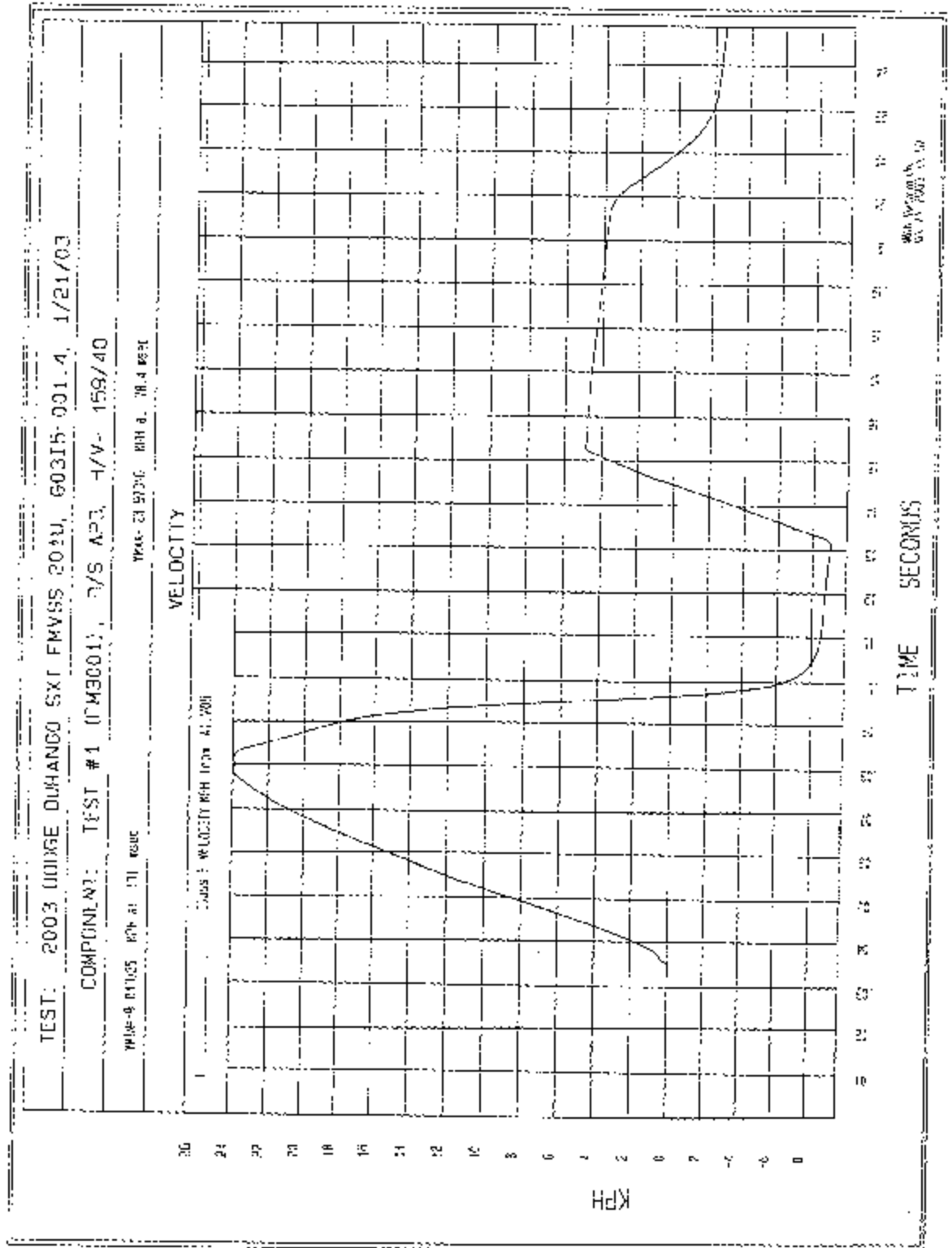
DISPLACEMENT MM











MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #5 RIGHT BPI
(FM3005) ILV = 90/25

PRE-TEST

MGA RESEARCH CORP
FMVSS 201C TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #5 RIGHT BP1
(FM3005) H/V = 90/25

POST-TEST

**MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV**

C30305

1/21/03

TEST #5

RIGHT BPI

(FM3005)

H/V = 90/25

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGAT201U_FRAME#2.3

DOC NO: MGAT201U_FRAME#2
REVISION NO: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C302305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango

GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side): left/right: BP1

Temperature: 22 °C

MGA Test Reference No: FM30025

Humidity: 22 %

Approach Angles: Horizontal: 90 °

Time of Test: 3:19 am/pm

Vertical: 2.5 °

FMH Serial No: 36

TEST RESULTS:

HIC(s)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
595	568	6.6	23.3	40	Z

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35923	100.9	1.21	1.21
Y	6	J35916	100.7	1.23	1.23
Z	7	J35919	100.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: [Signature] Date: 1/21/03

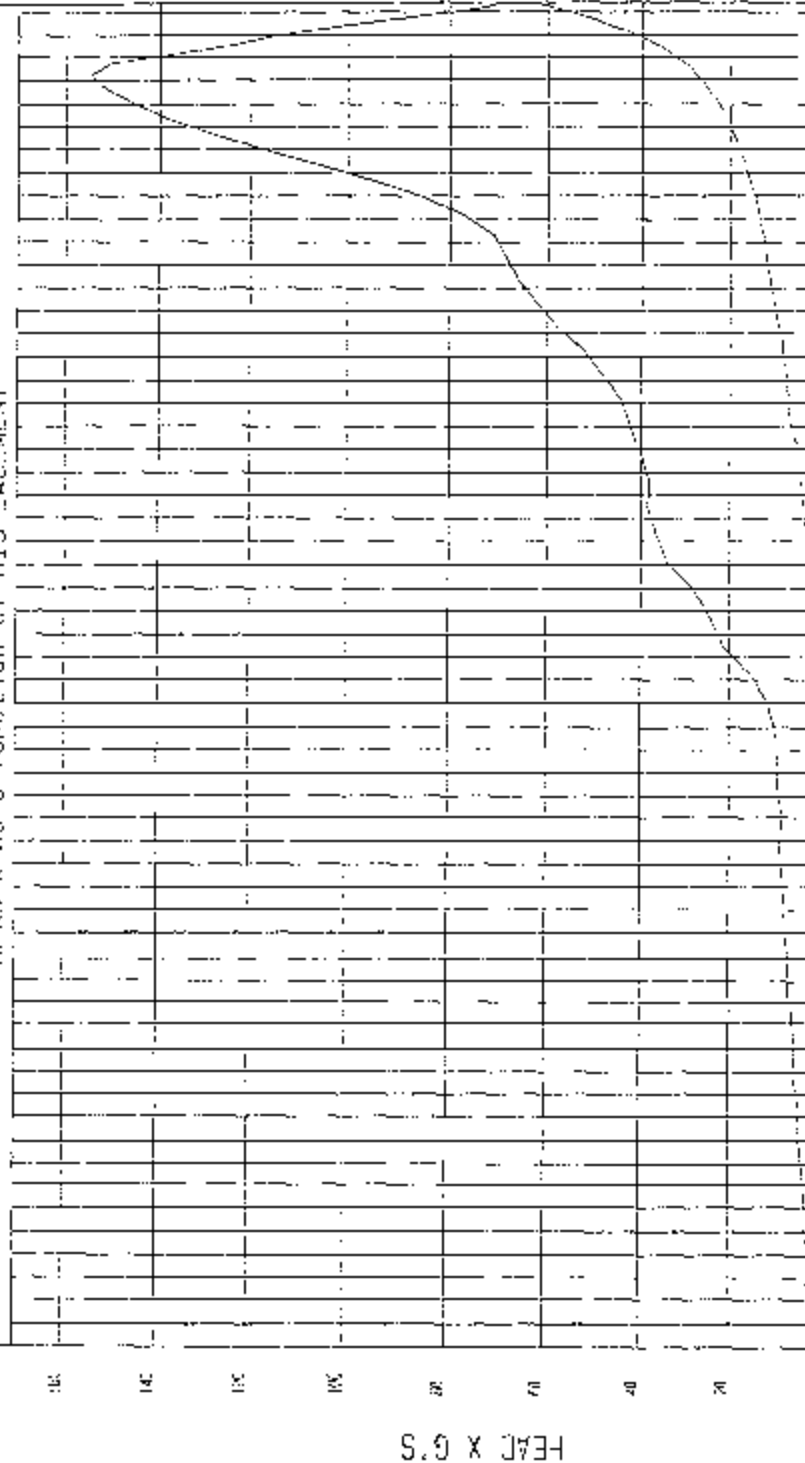
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC35 PROGRAM
*****
The input file is \NETSA\FM3005AV.A05
The HIC = 567.58 calculated over 6.6 msec
T1 = 7.07 msec T2 = 13.65 msec
*****
HIC(d) = 595
Impact Velocity = 23.3 (kph)
```

TEST: 2003 300CF DURAND SXT FMVSS 2010, G0315-001.4, 1/21/03

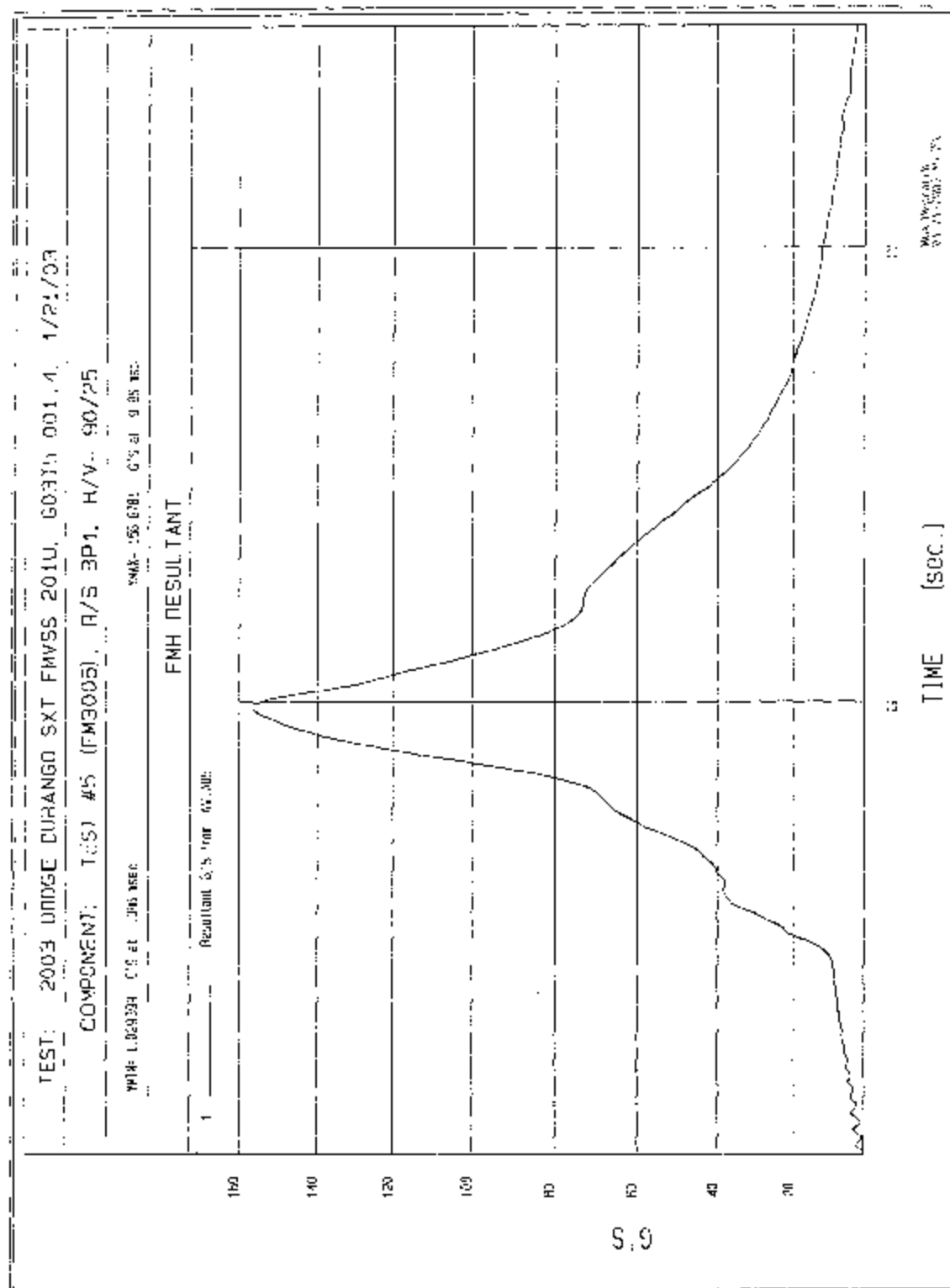
COMPONENT: TEST #5 (FM3005), R/S BP1, R/V= 90/25

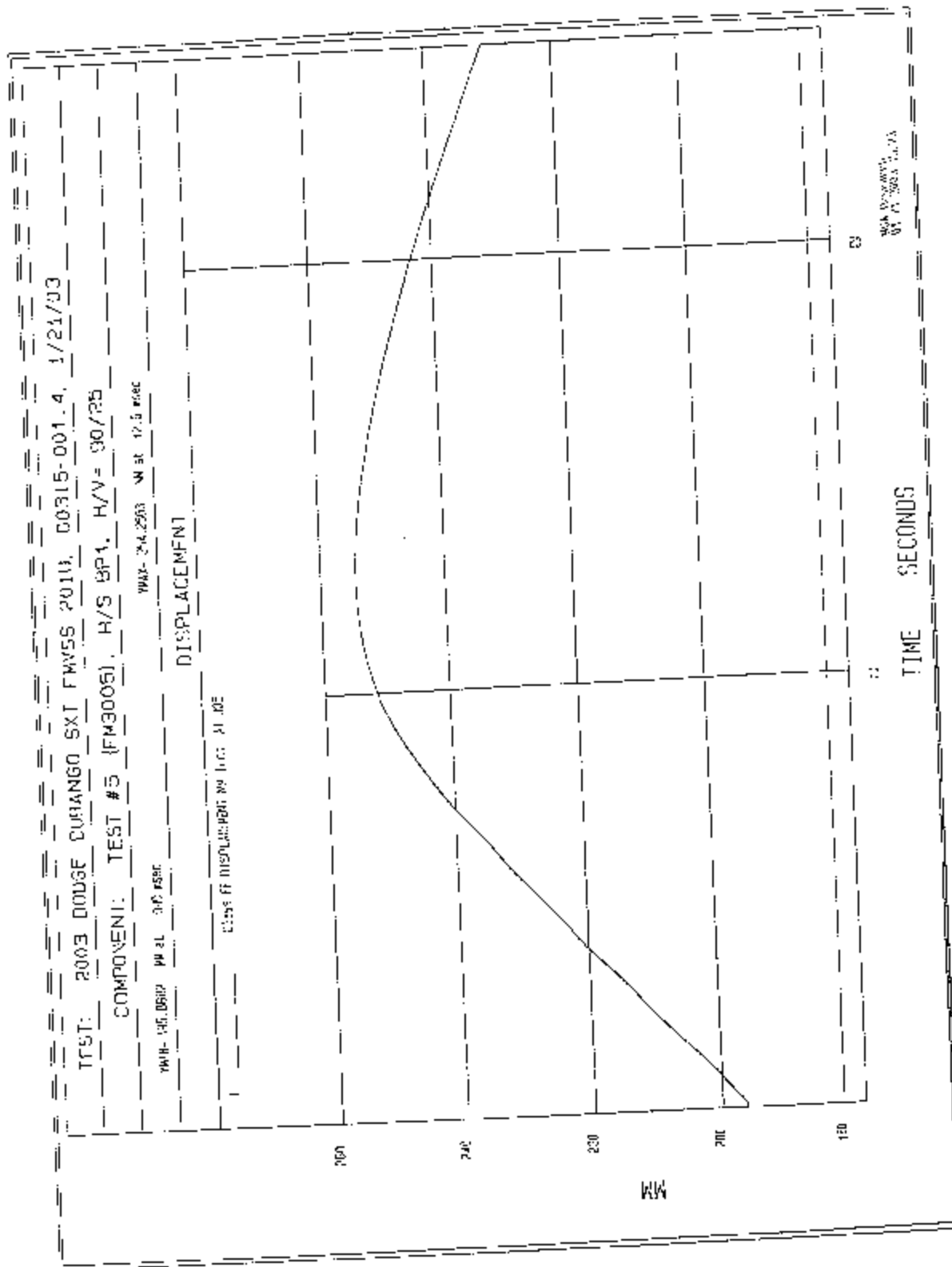
HEAD X AS A FUNCTION OF DISPLACEMENT

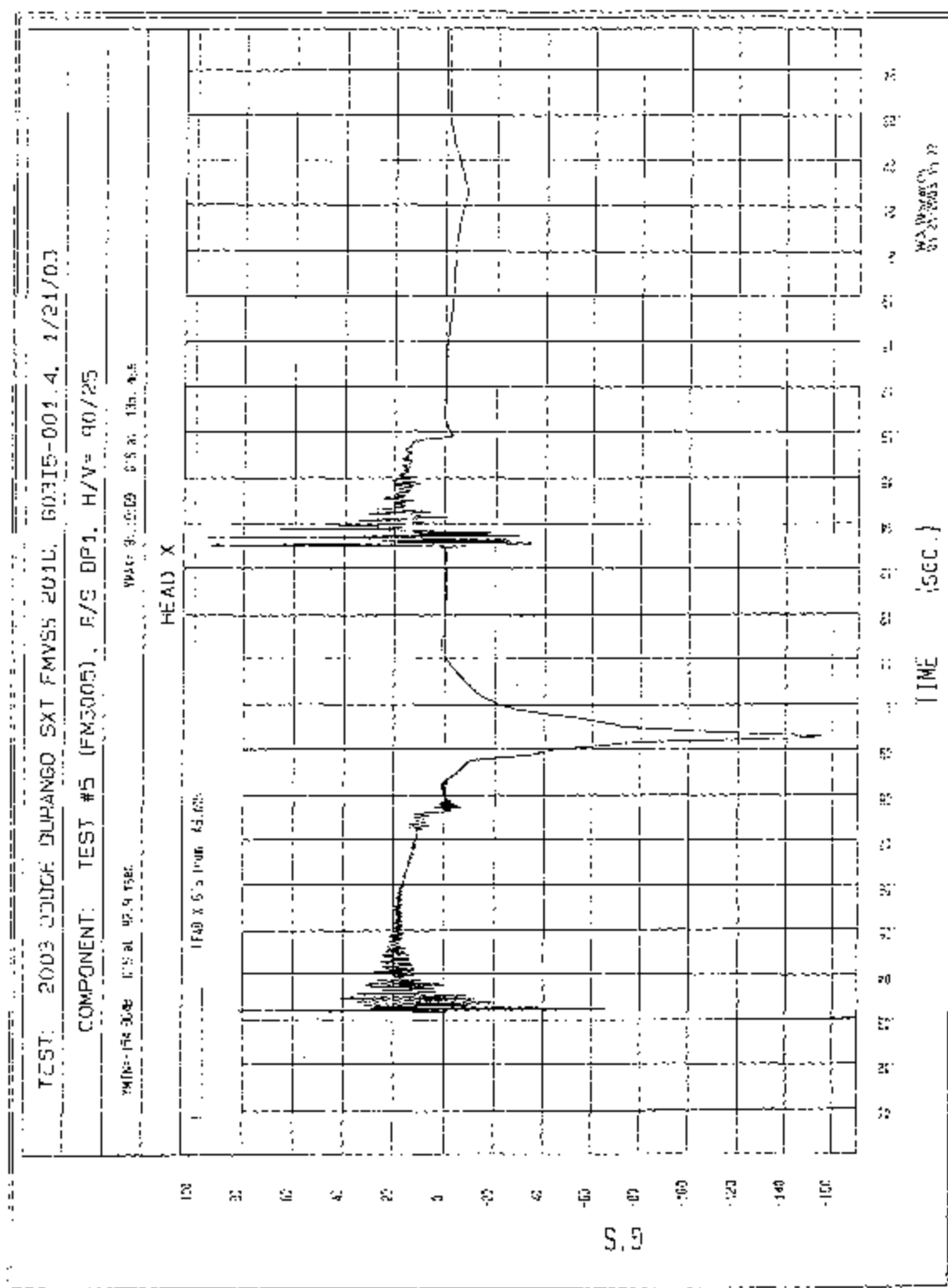


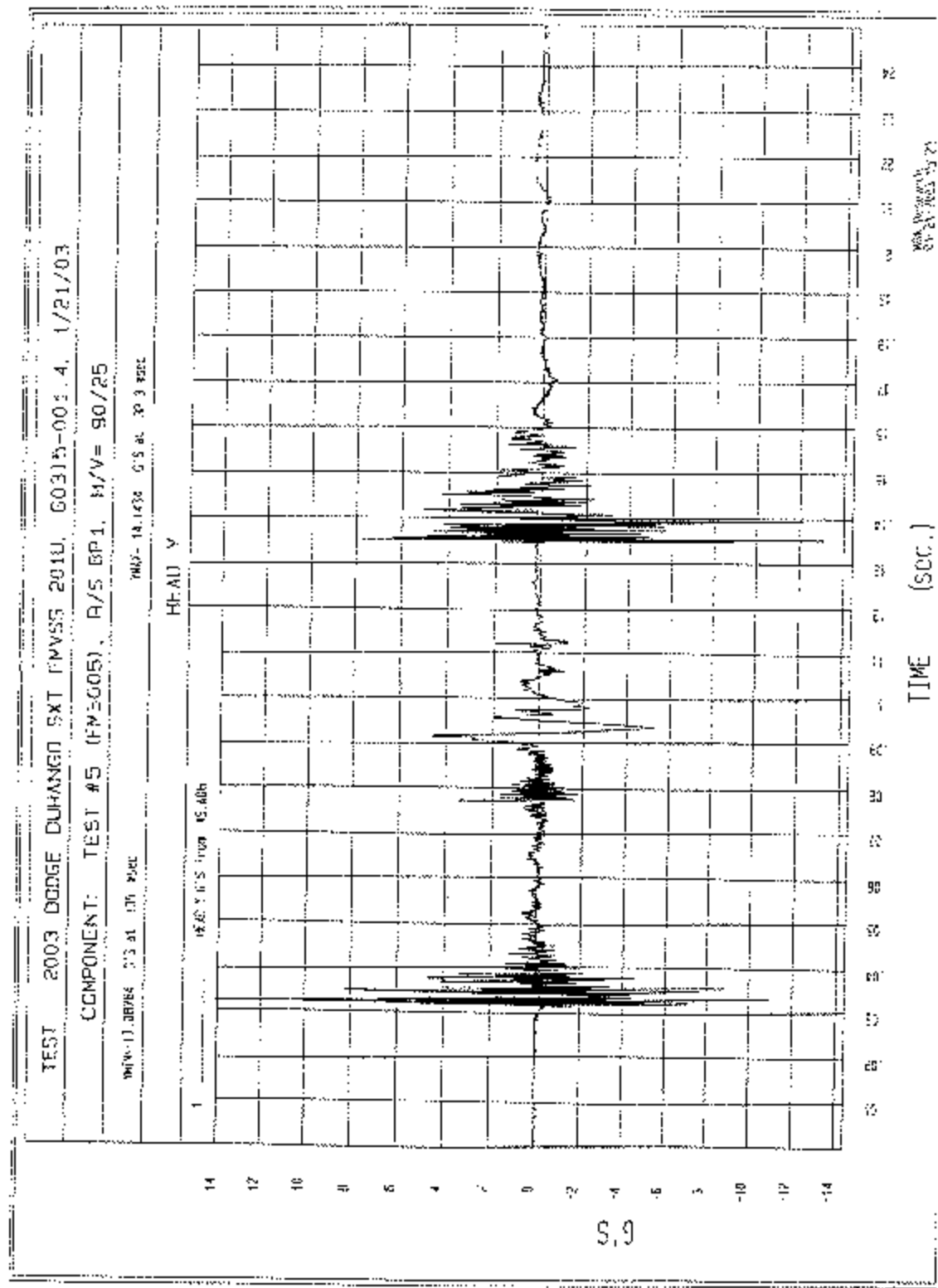
DISPLACEMENT MM

WIA INCORPORATED
03-15-001.4-23









WAVE-11.14736 0'S at 30 3 8000

TEST: 2003 DODGE DURANGO SXT FMVSS 2014, G0315-001.4, 1/21/03

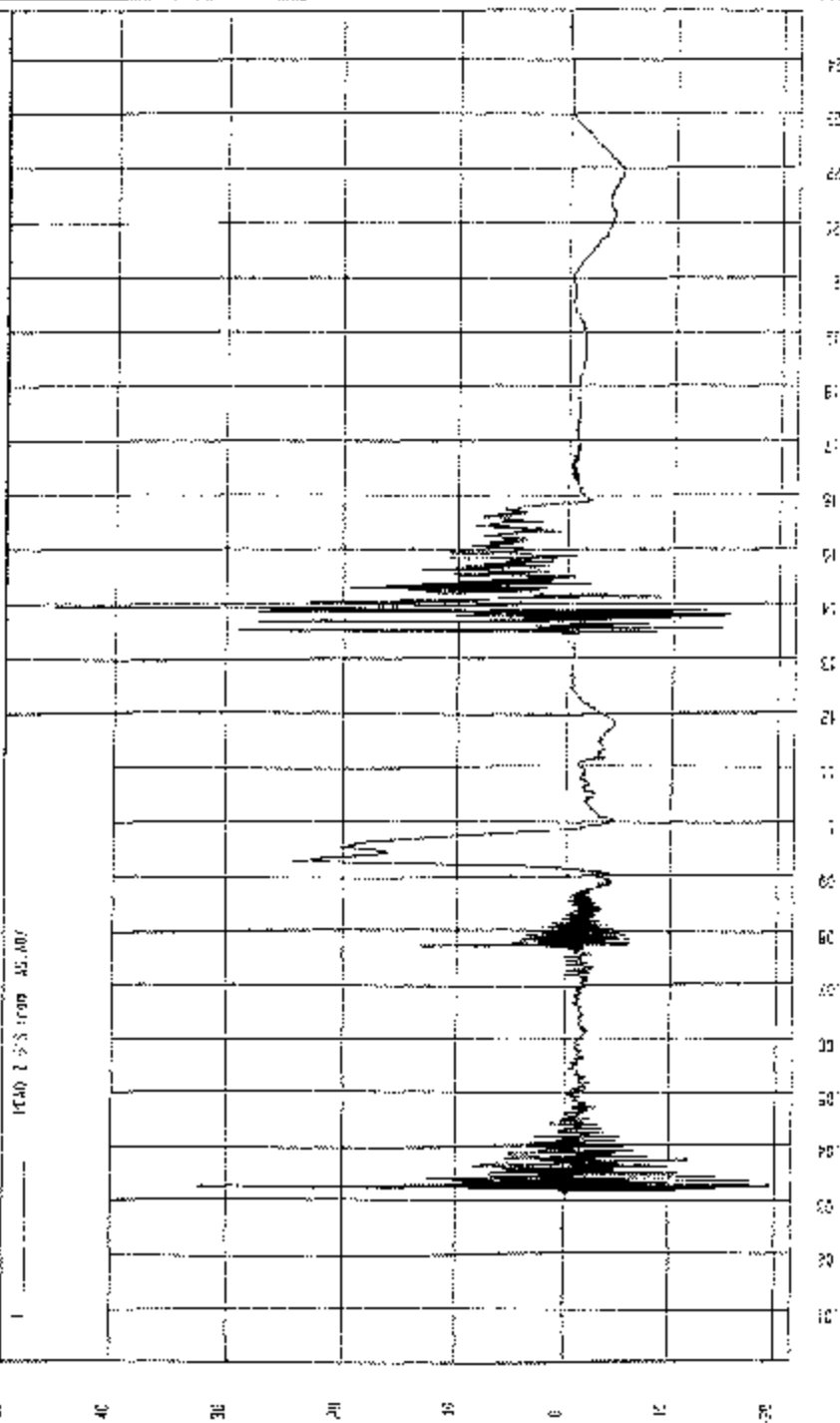
COMPONENT: TEST #5 (FM3005), P/S RPT, H/V= 90/25

FMVSS-09 S013 0'3 at 12.5 mm

YMA= 45 BPS= 0'1 at 1.20 mm

HEAD Z

HEAD 1 5'S 1000 45.007



TEST: 2003 DODGE DURANGO SXT FMVSS 2010, 60315-001.4, 1/21/03

COMPONENT: TEST #5 (FM3005), R/S BP1, H/V= 50/25

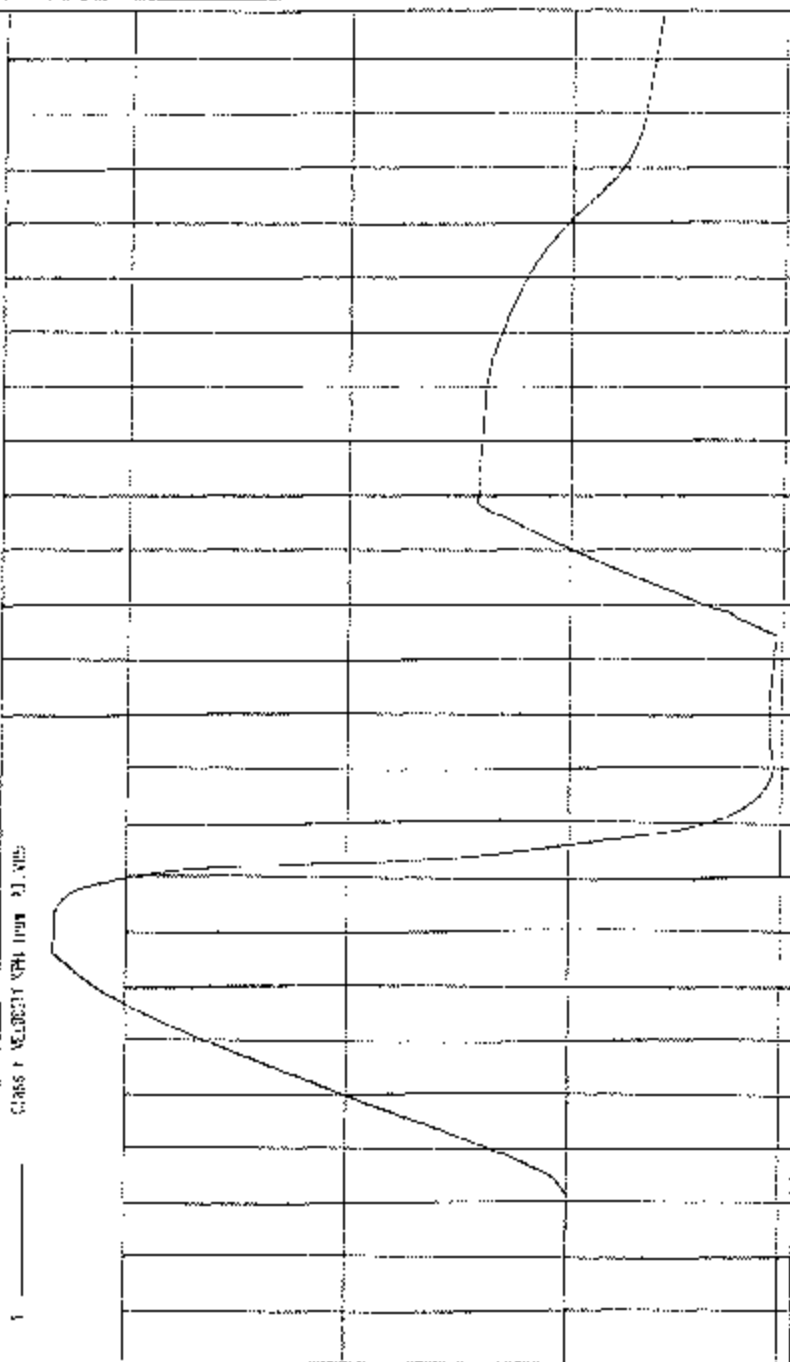
YMIN=0.69627 KPH at 133 msec

YMAX=21.41815 KPH at 16.5 msec

VELOCITY

GRID 1: MEAN HEAD VELOCITY (50/25)

1



0.00

0.02

0.04

0.06

0.08

0.10

0.12

0.14

0.16

0.18

0.20

0.22

0.24

0.26

0.28

0.30

0.32

0.34

0.36

0.38

0.40

0.42

0.44

0.46

0.48

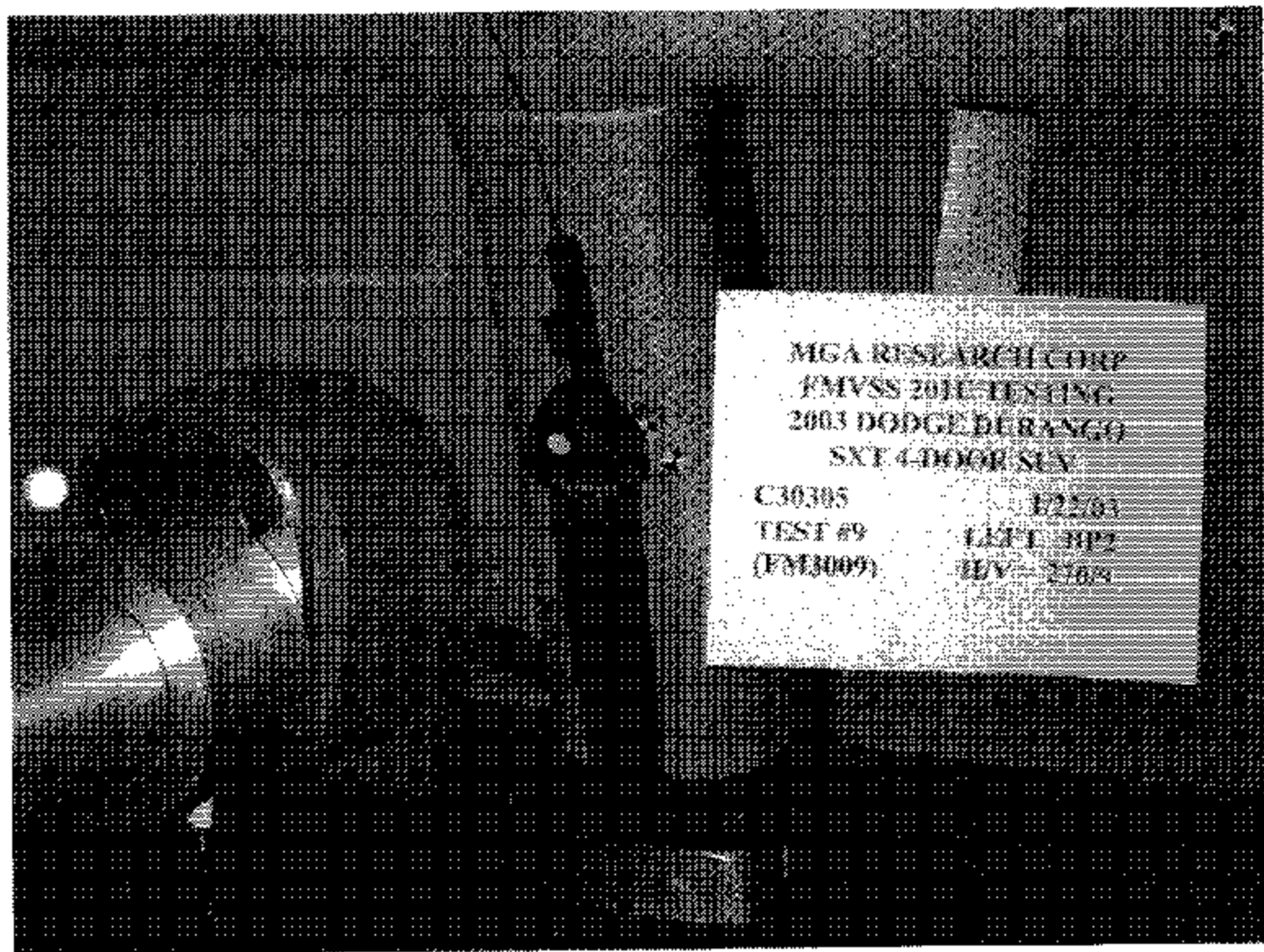
0.50

0.52

0.54

0.56

0.60



MGA RESEARCH CORP
FMVSS 201C TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #9 LEFT BP2
(FME009) REV - 2/03



MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #9 LEFT BP2
(FM3009) H/V = 270/9

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGATP201U_FRAME #2.3

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 4
PAGE 5 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C30305 VEHICLE YR/MAKE/MODEL: 2003 Dodge Durango

GENERAL TEST PARAMETERS:

Test Number: 9

Target (Vehicle Side): Left BP2

Temperature: 72 °F CD

MGA Test Reference No.: Fm3009

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 11:08 am pm

Vertical 9 °

FMH Serial No: 33

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>613</u>	<u>593</u>	<u>3.5</u>	<u>23.7</u>	<u>4</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J3647</u>	<u>-108.2</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J3643</u>	<u>102.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J3633</u>	<u>978</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: [Signature] Date: 1/22/03

*Only necessary for NHTSA (Government) Compliance testing.

RESULTS OF HIC36 PROGRAM

The input file is \NHTSA\FM3009AV.A05

HIC = 592.59 calculated over 3.5 msec

T1 = 3.69 msec T2 = 7.17 msec

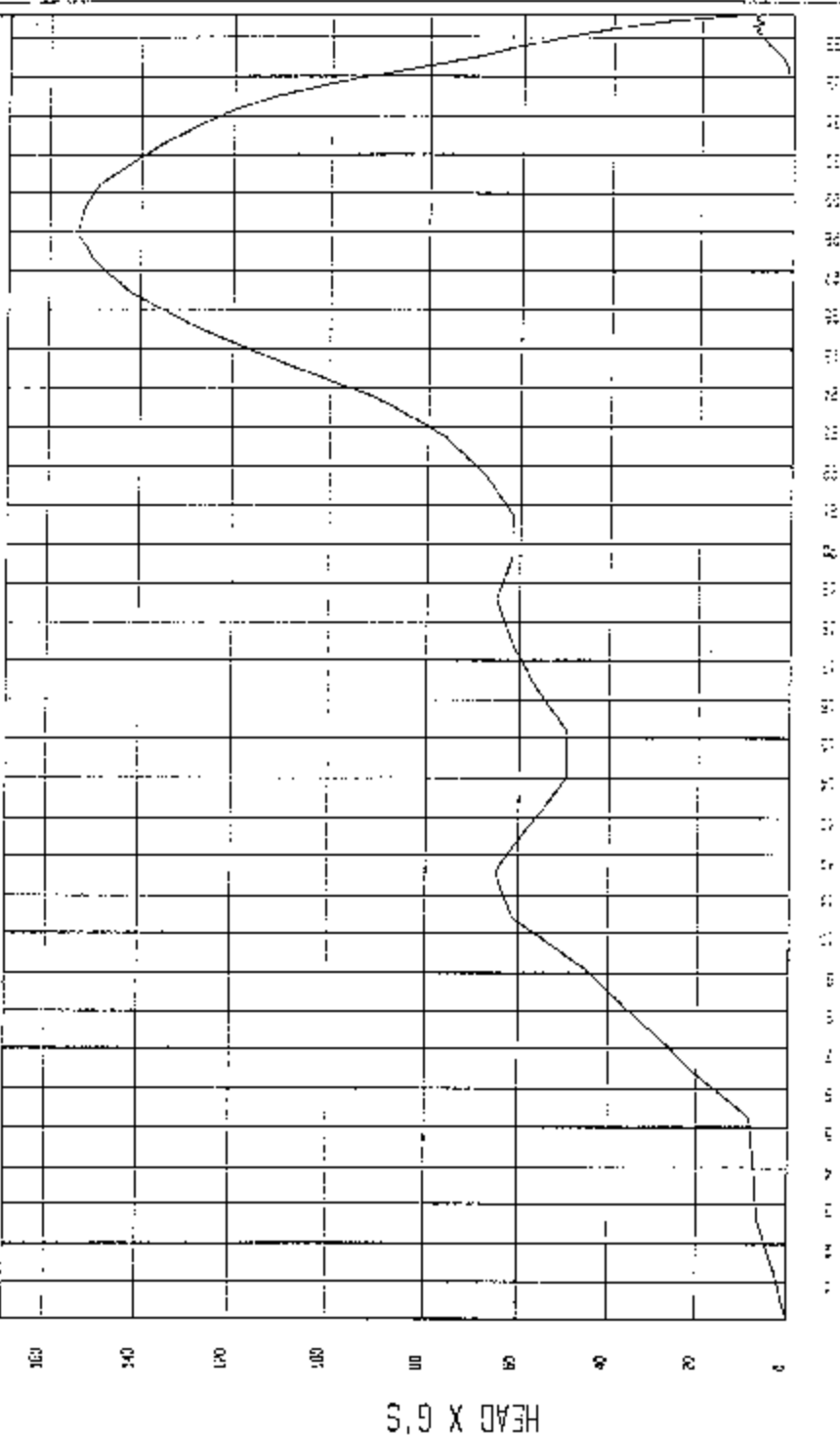
HIC(d) = 613

Impact Velocity = 23.7 (kph)

TEST: 2003 DODGE DURANGO SXT FMVSS 2010, G0315-001.4, 1/22/03

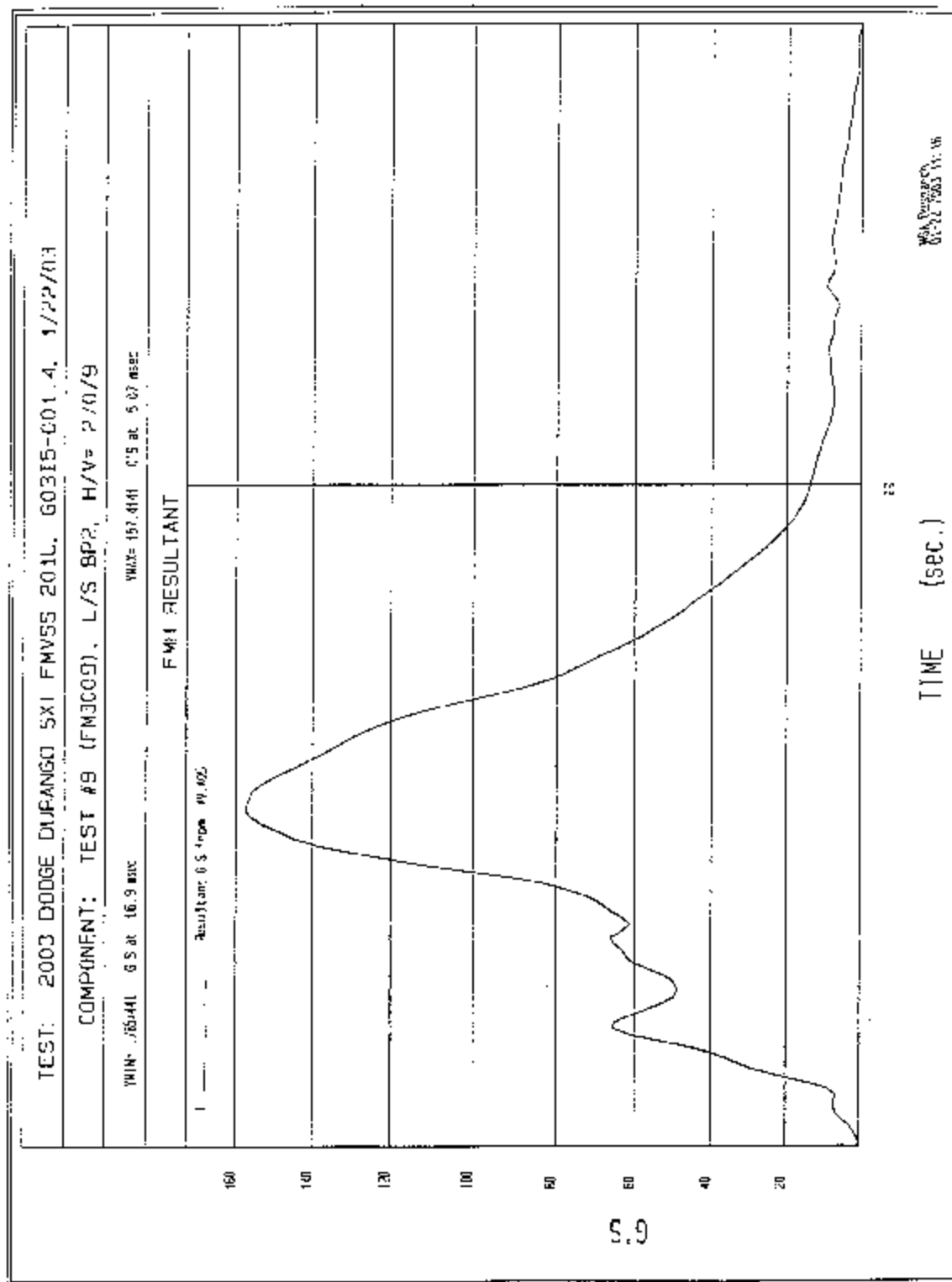
COMPONENT: TEST #9 (FM3009), L/S BPP, H/V= 270/9

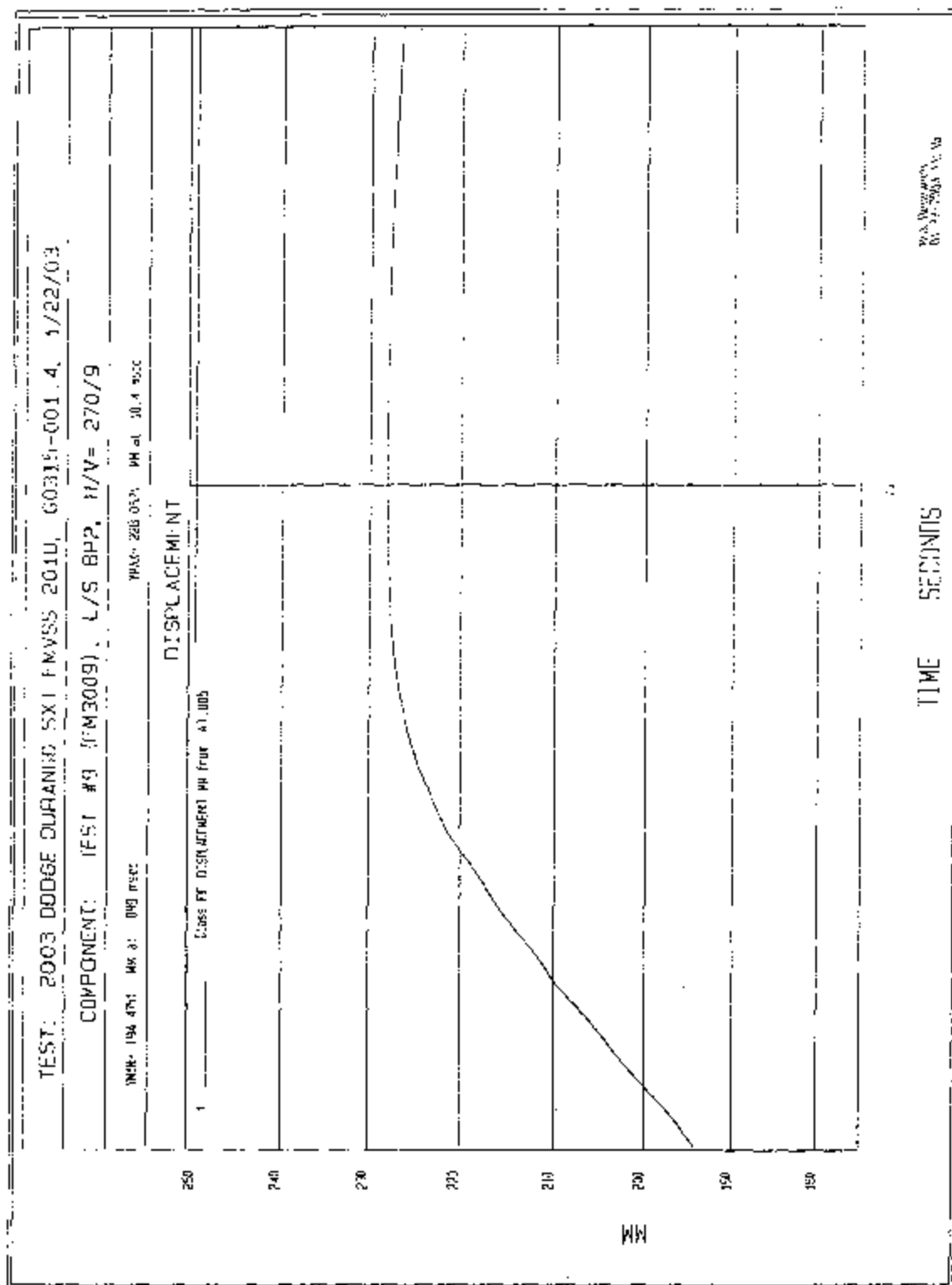
HEAD X as a function of DISPLACEMENT



WIA 10/20/03
01/22/2003 11:17

DISPLACEMENT MM





TEST: 2003 OGDGE DURANGO SXT FMVSS 2010, G0315-001.4, 1/22/03

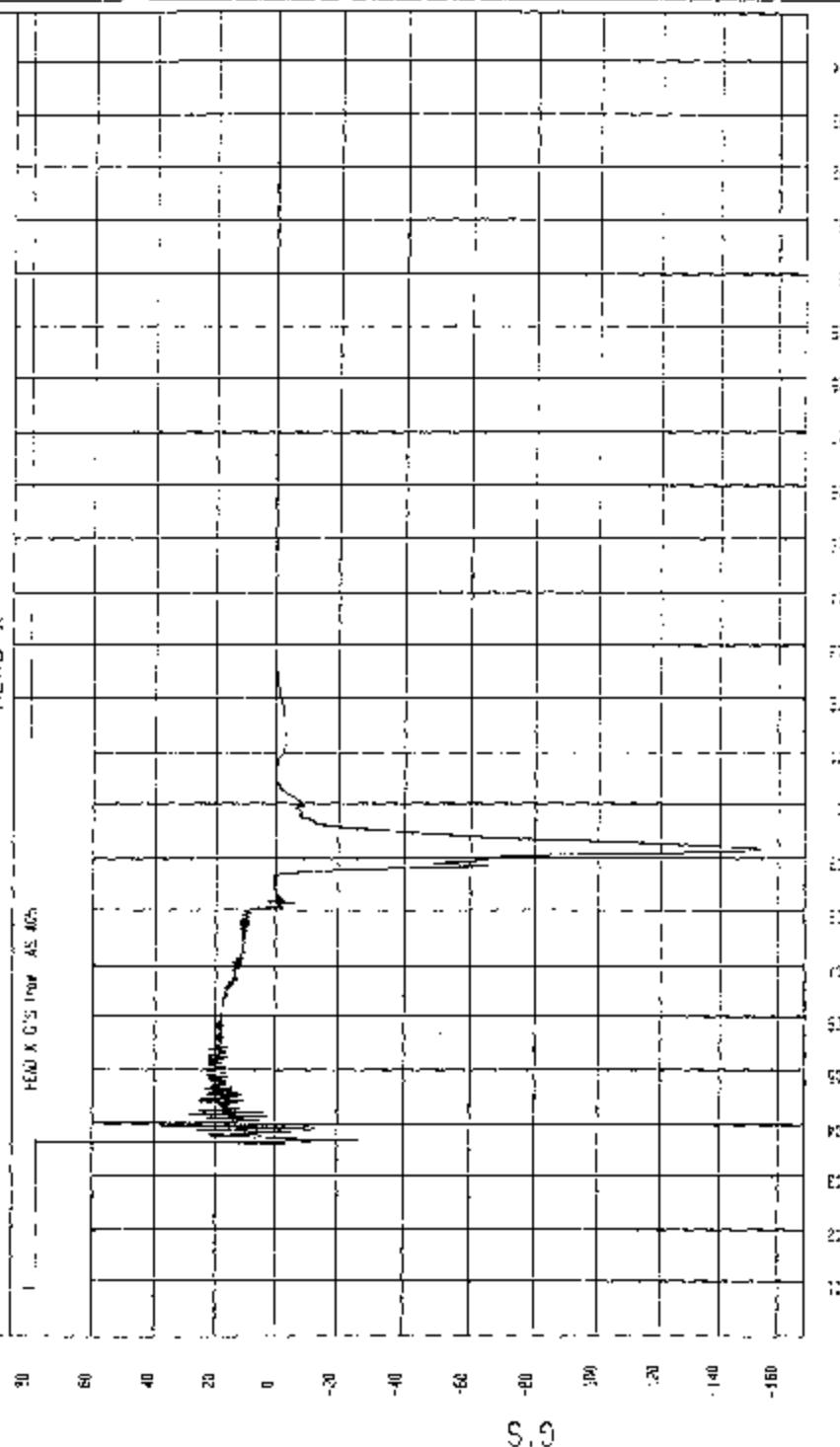
COMPONENT: TEST #9 (FM3009), L/S BP2, H/V = 270/9

FMH=153.1467 6.5 at 91.6 msec

YMAX= 77 91726 373 at 76.6 msec

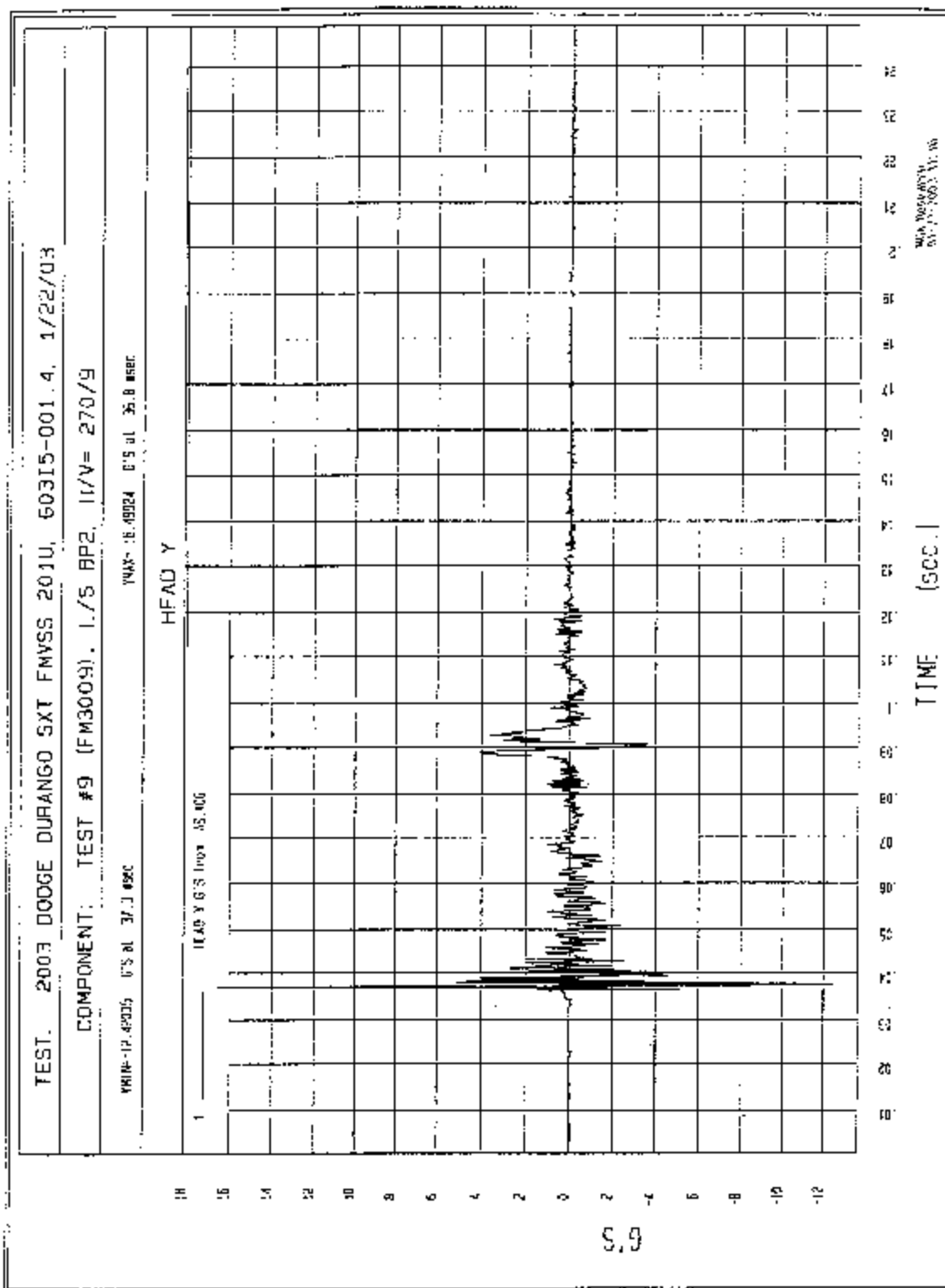
HEAD X

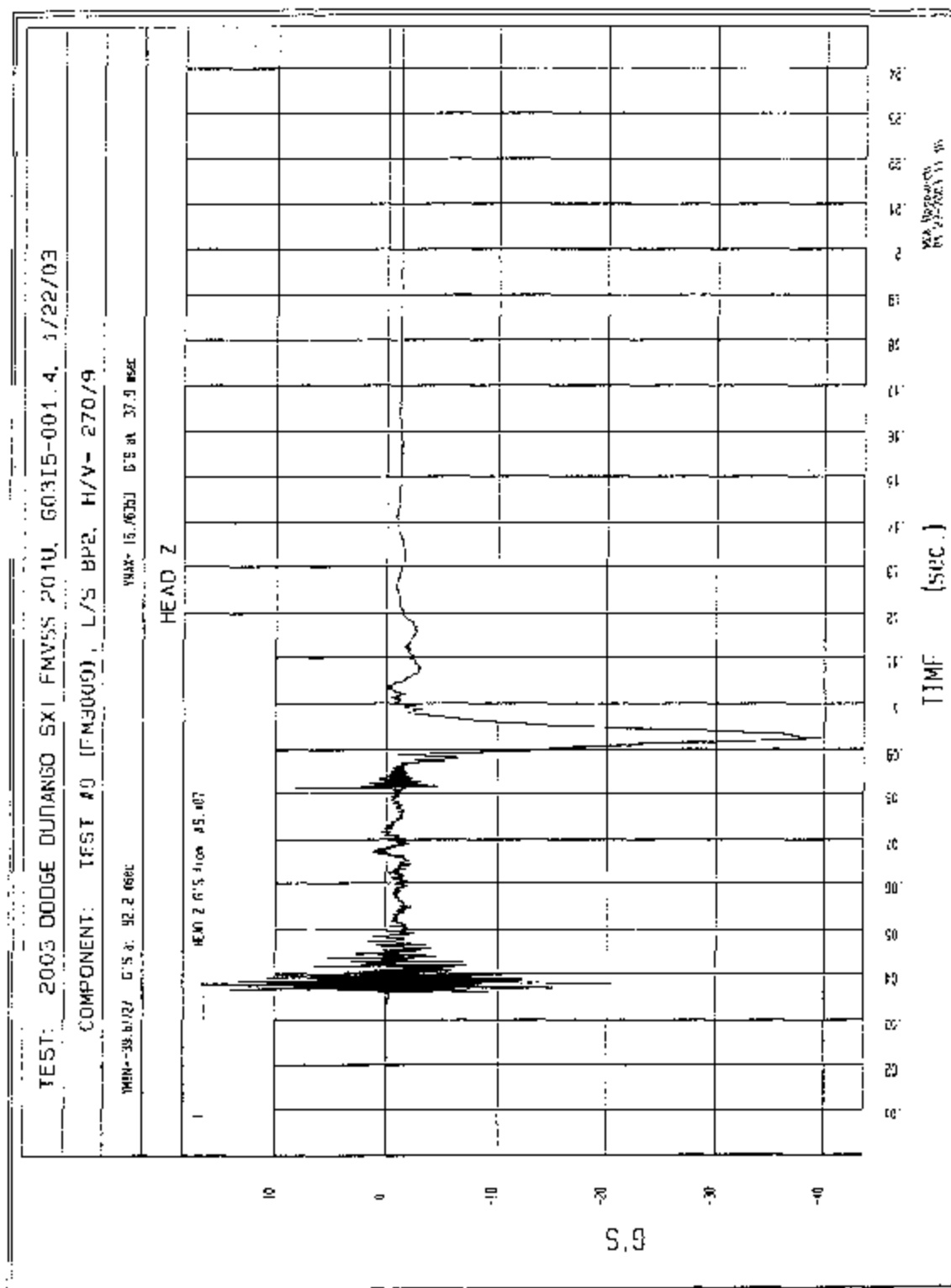
HEAD X C'S 1000 AS 405

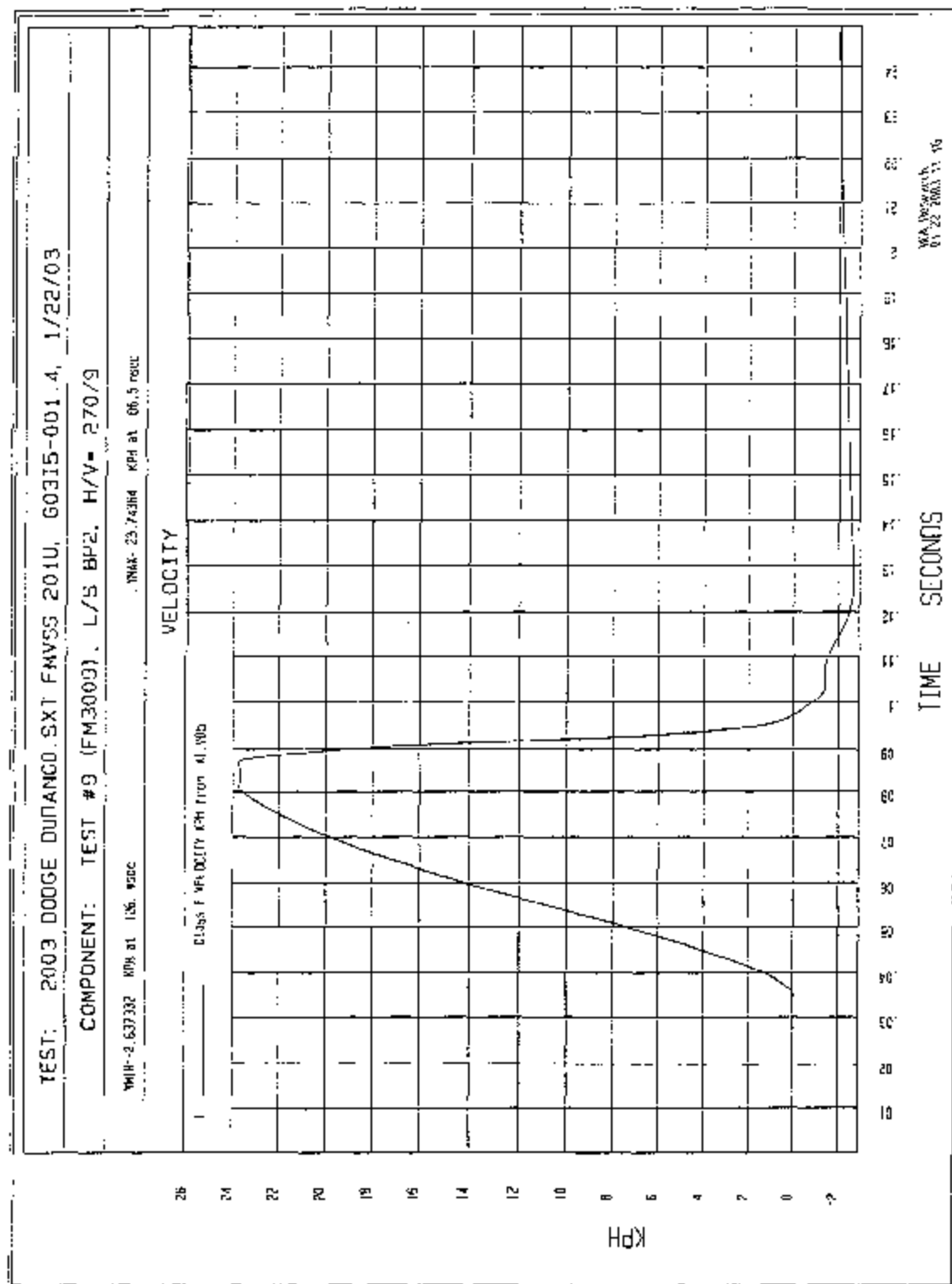


TIME (SEC.)

MAX. HEAD X C'S 1000 AS 405







MEGA RESEARCH CORP.
FATIGUE TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C6038 62103
TEST #1 RIGHT HP3
(2013094) REV # 8763
PRE-TEST

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

G30305 1/21/03
TEST #4 RIGHT BP3
(FM3004) H/Y = 87/±2

POST-TEST

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #4 RIGHT BP3
(FM3004) H/V = 87/-2

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGATP201U_FRAME#23

DOC NO: MGATP201U_FRAME#2
REVISION NO: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: 6053-1001 VEHICLE YR/MAKE/MODEL: 2003 DODGE DUMPED

GENERAL TEST PARAMETERS:

Test Number: 4

Target (Vehicle Side): Left Front: BP3

Temperature: 22 °C

MGA Test Reference No.: FM3004

Humidity: 22 %

Approach Angles: Horizontal 87 °

Time of Test: 2:47 am PT

Vertical -2 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	At (msec)	Velocity (km)	Impact location on FMH (mm)	
				Above Ft. O	Left/Right Ft. O
<u>510</u>	<u>456</u>	<u>11.3</u>	<u>23.8</u>	<u>14</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35924</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35919</u>	<u>95.3</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35051</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

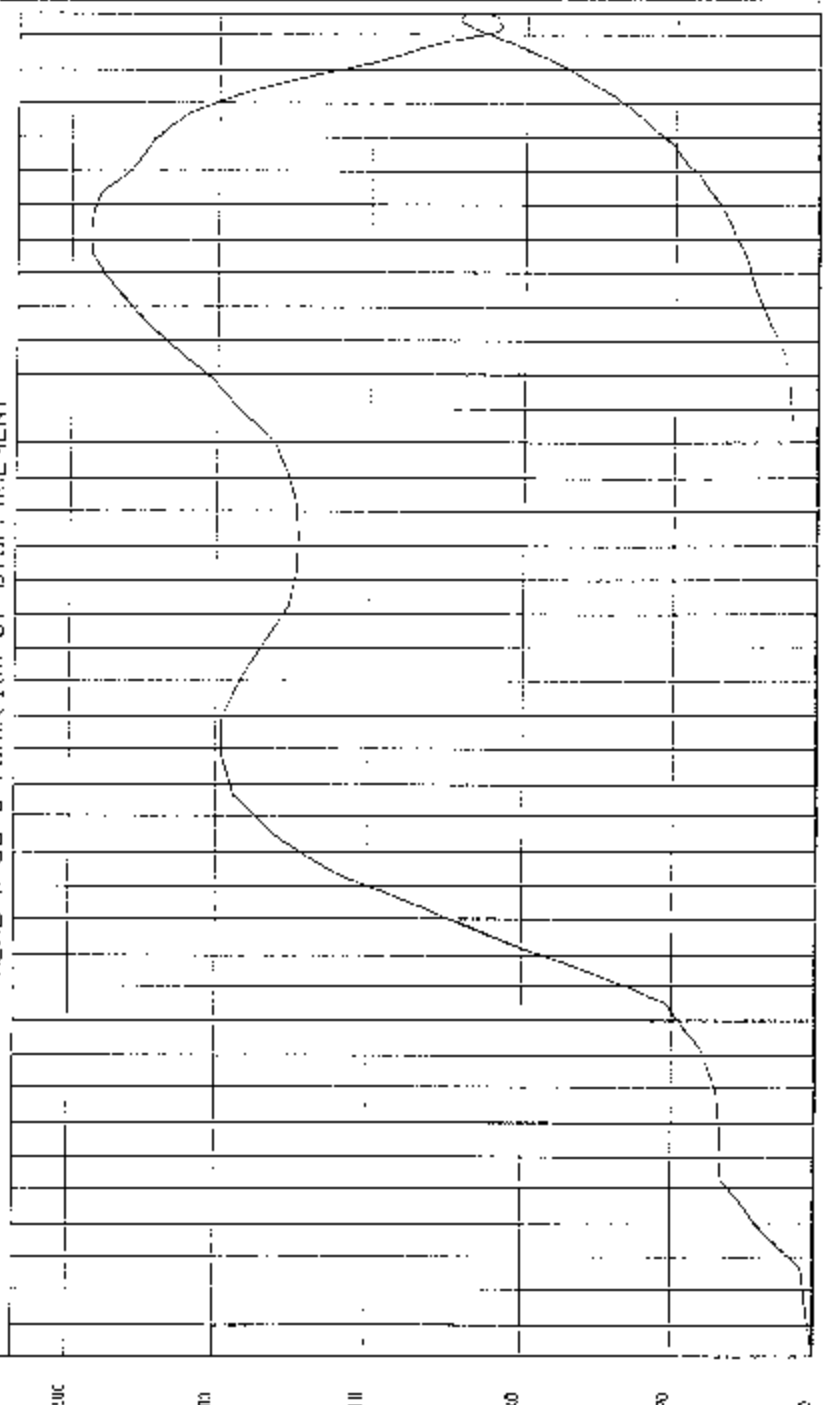
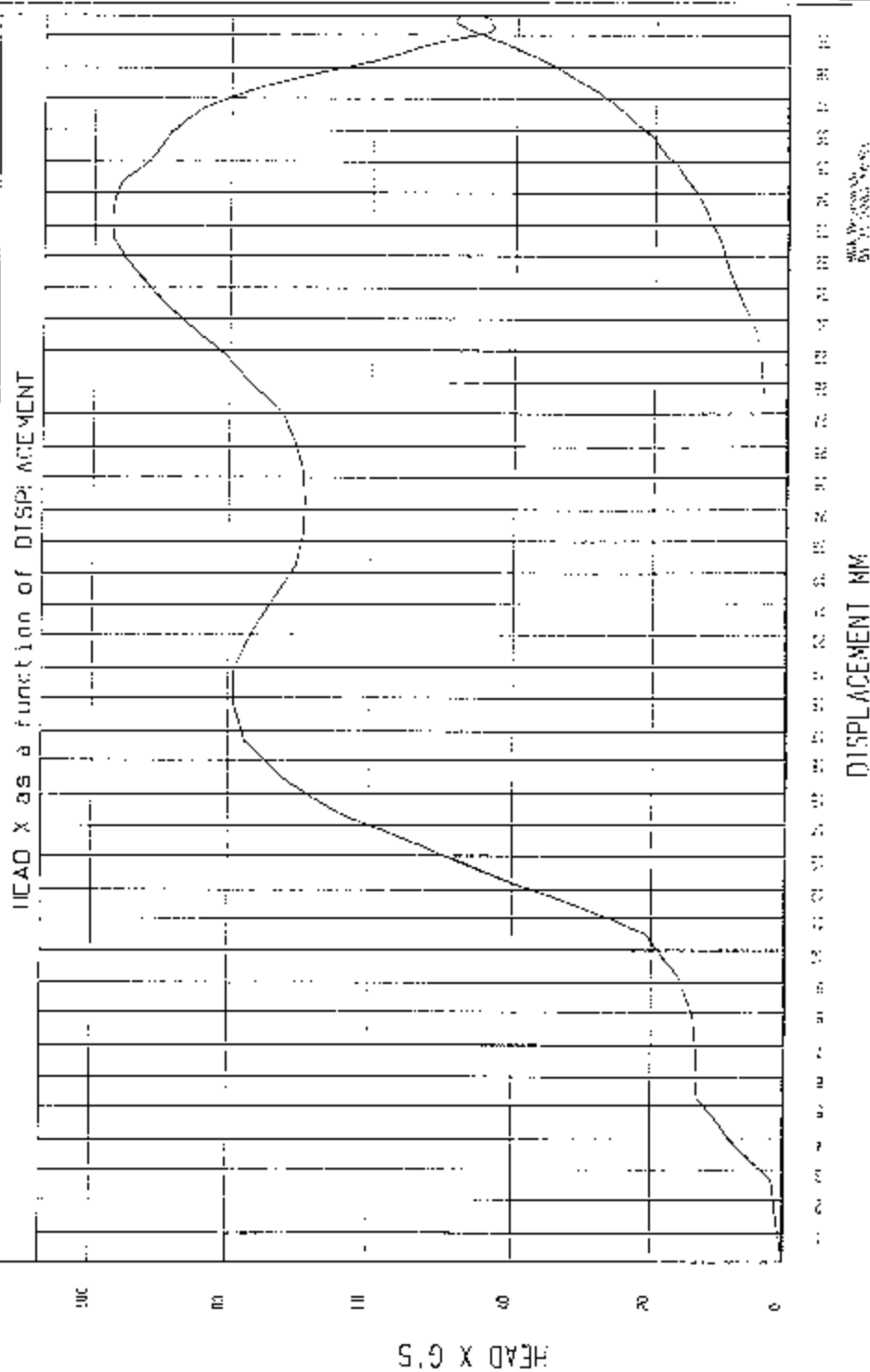
Recorded By: [Signature] Approved By*: [Signature] Date: 1/21/03

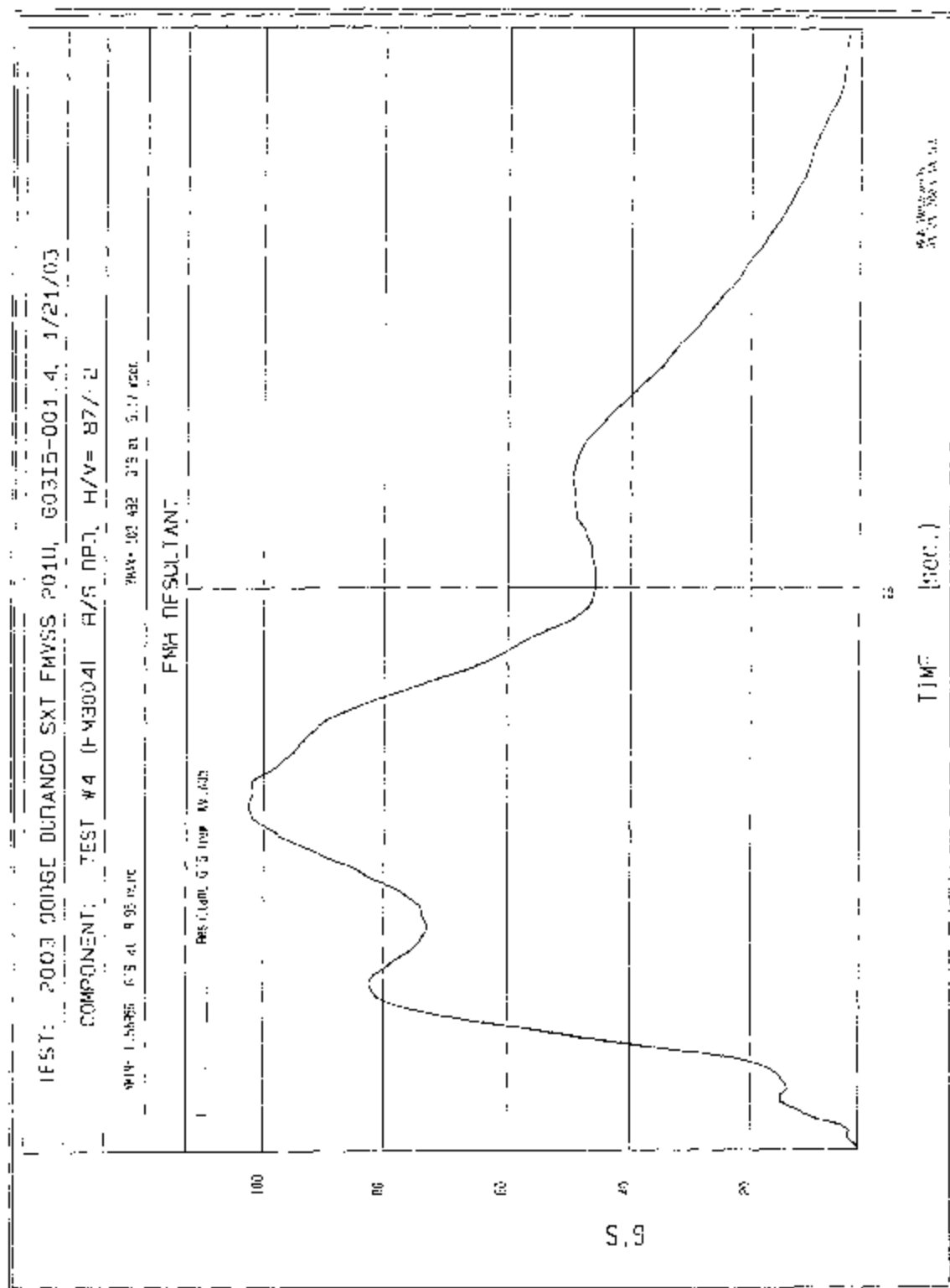
*Only necessary for NHTSA (Government) Compliance testing.

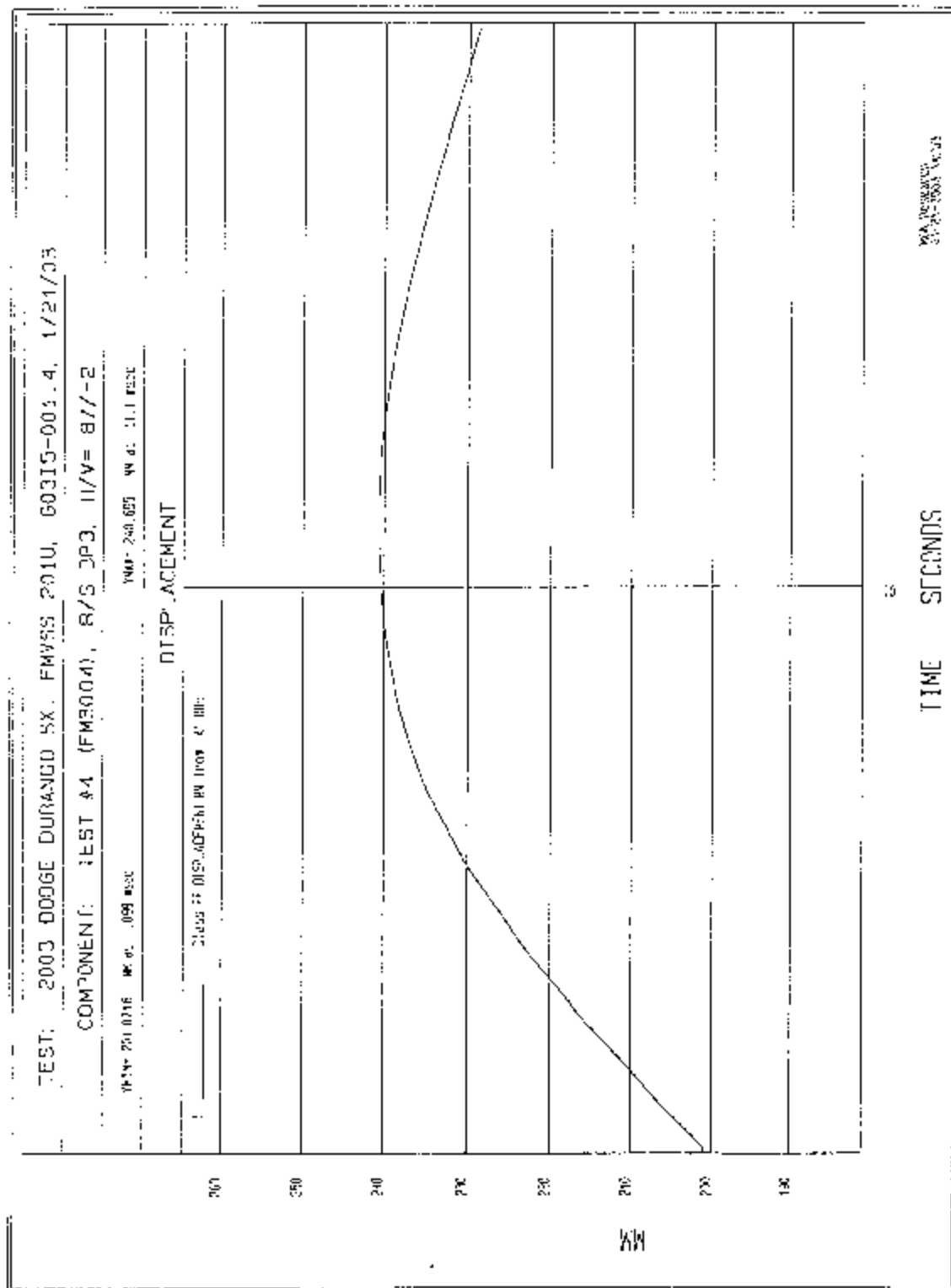
```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NETSA\FM3004AV.A05
The HIC = 455.84 calculated over 11.3 msec
T1 = 1.89 msec T2 = 13.15 msec
*****
HIC(d) = 510
Impact Velocity = 23.8 (kph)
```

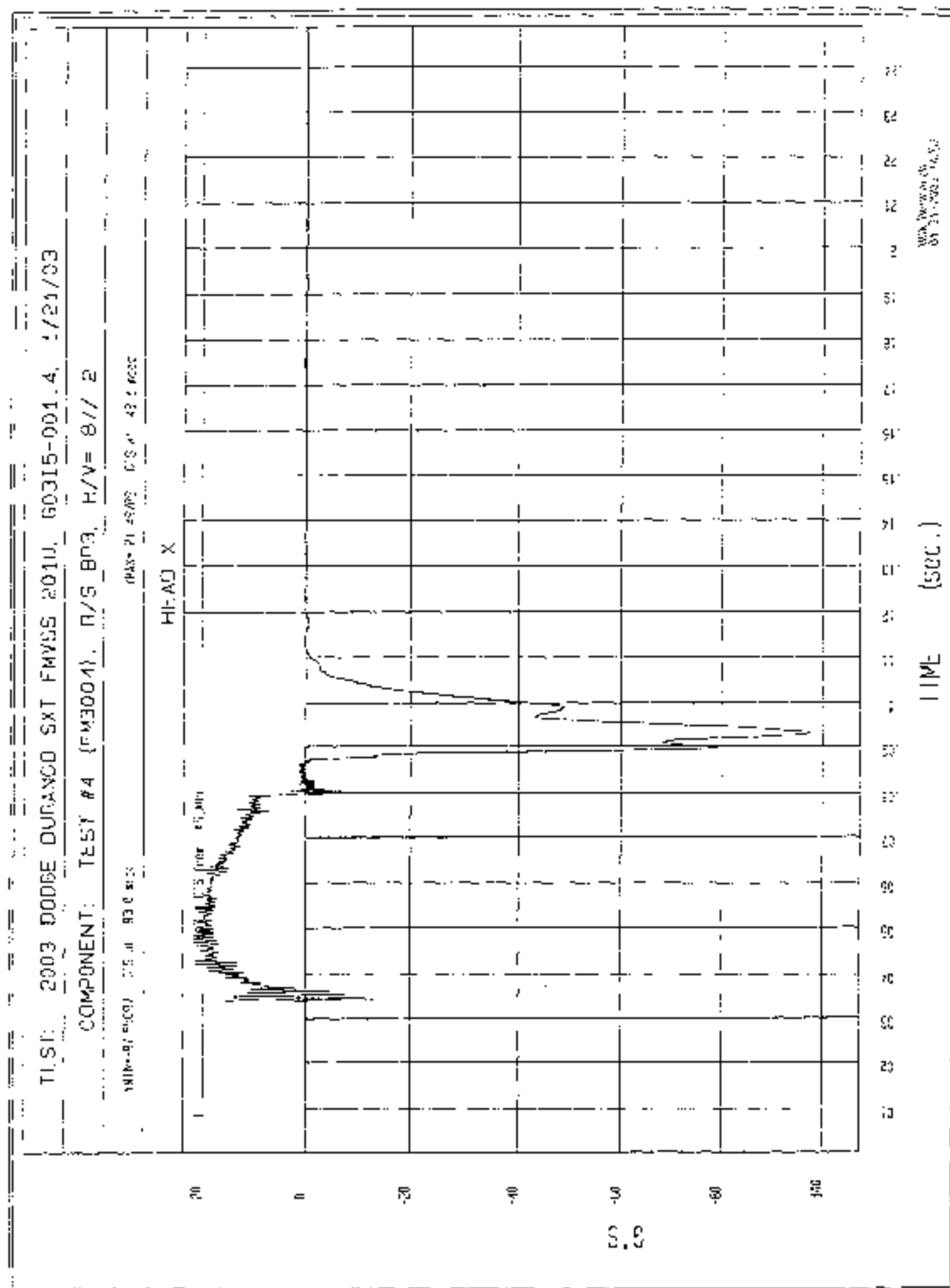
1991- 2003 DODGE DURANGO SXT 4WD 2010, G0315-001 4, 1/21/03

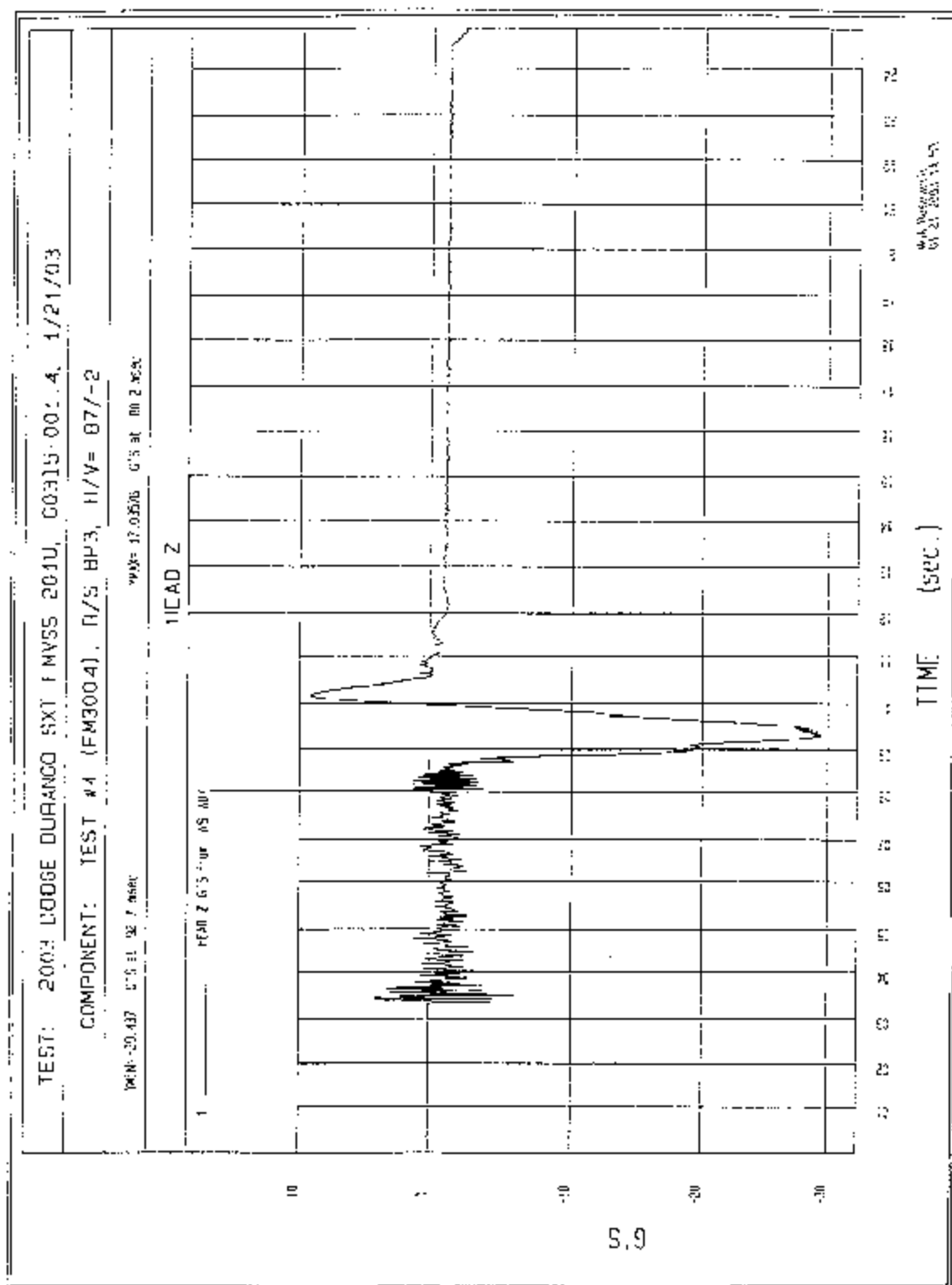
COMPONENT: TEST #4 (FME004), H/S BP3, H/V - F7/-2

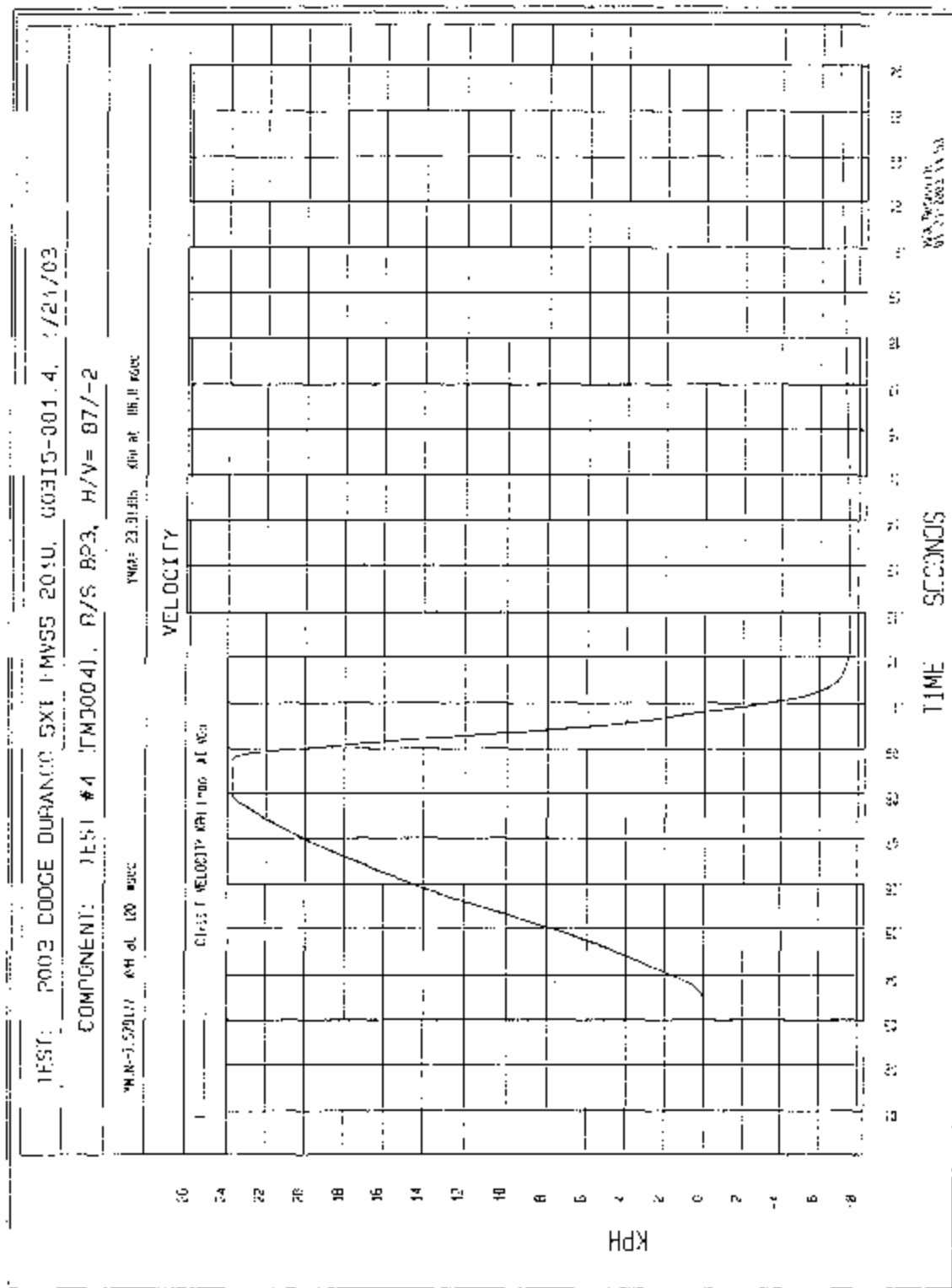












MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305

1/21/03

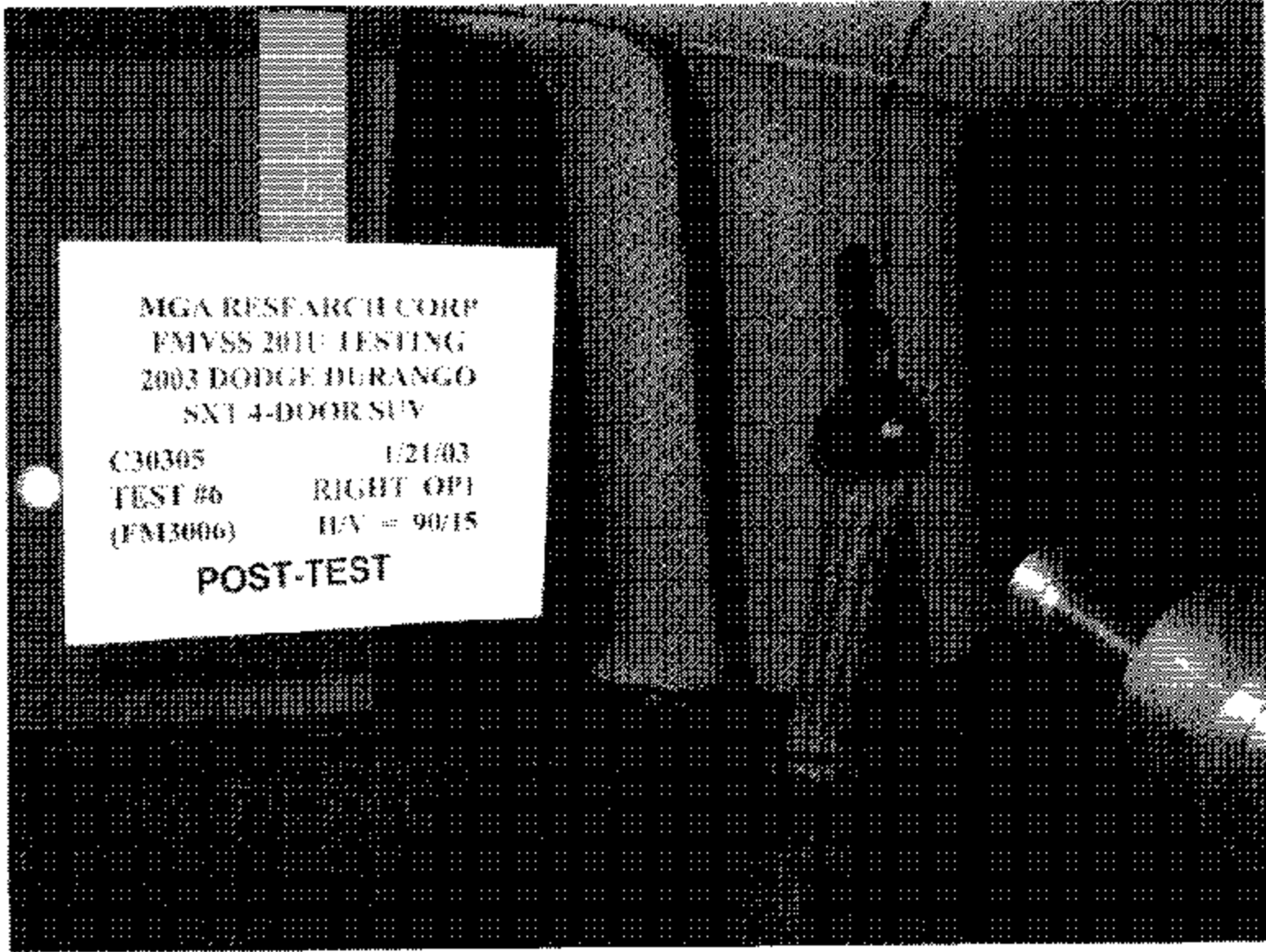
TEST #6

RIGHT OPI

(FM3006)

H/V = 90/15

PRE-TEST



MGA RESEARCH CORP
FMVSS 2011 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #6 RIGHT OP1
(FM3006) H/V = 90/15

POST-TEST

**MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV**

**C30305
TEST #6
(FM3006)**

**1/21/03
RIGHT OP1
H/V = 90/15**

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGATP201U_FRAME #2.3

DOC. NO: MGATP201U_FRAME #2
REVISION NO: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO C303ES VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

GENERAL TEST PARAMETERS:

Test Number: 6

Target: (Vehicle Side): left OP1

Temperature: 22 °F FEQ

MGA Test Reference No.: FM3006

Humidity: 22 %

Approach Angles: Horizontal 90 °

Time of Test: 4:45 am/pm pm

Vertical 15 °

FMV Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMV (mm)	
				Above Pt. O	Left/Right Pt. O
<u>550</u>	<u>509</u>	<u>7.9</u>	<u>23.6</u>	<u>4</u>	<u>1</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No	D.R. Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J36193</u>	<u>-100.2</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J36193</u>	<u>102.0</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J36353</u>	<u>97.8</u>	<u>1.51</u>	<u>1.51</u>

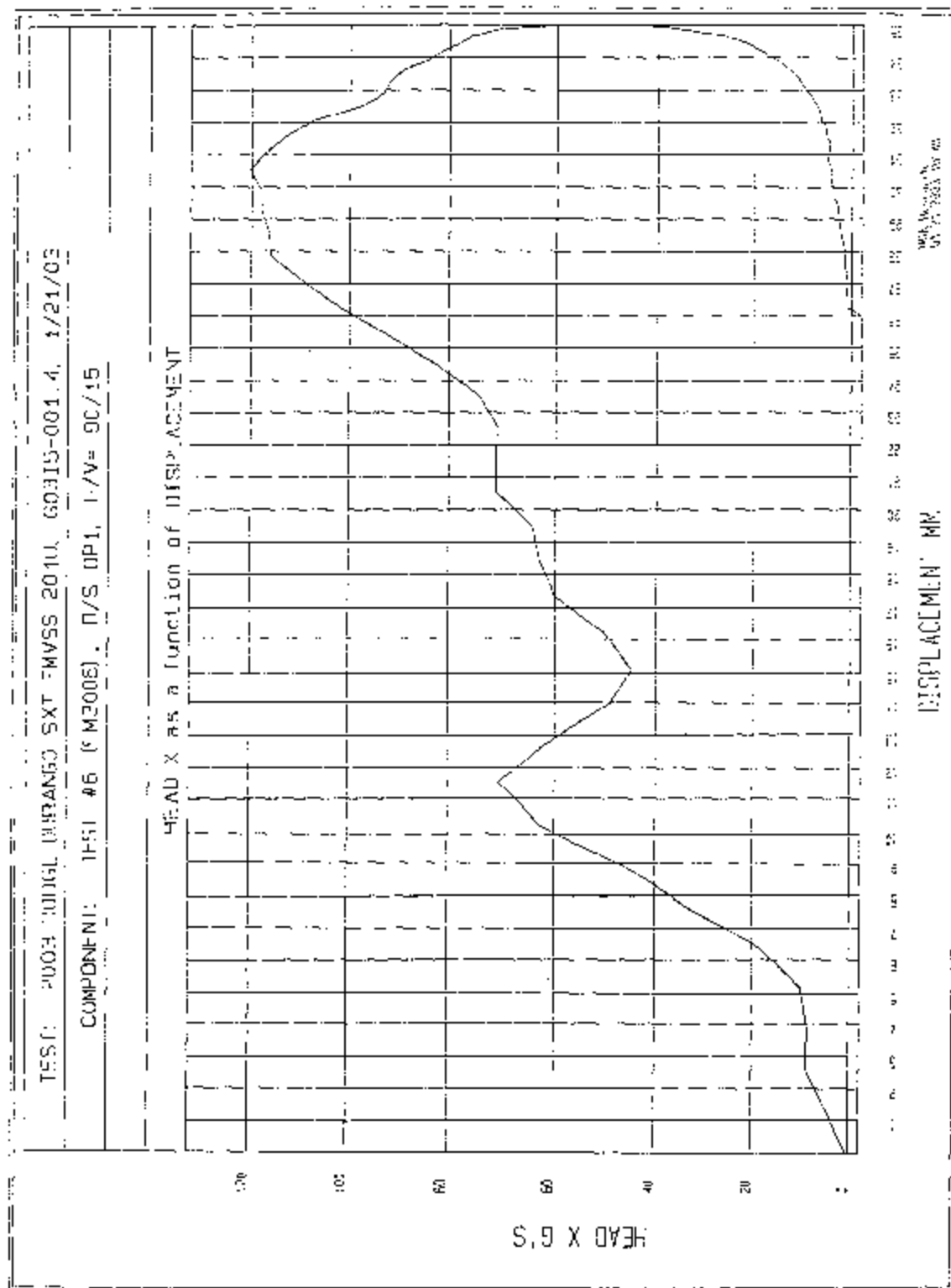
REMARKS (Summary of test damage, non-compliance, invalid test, etc.): _____

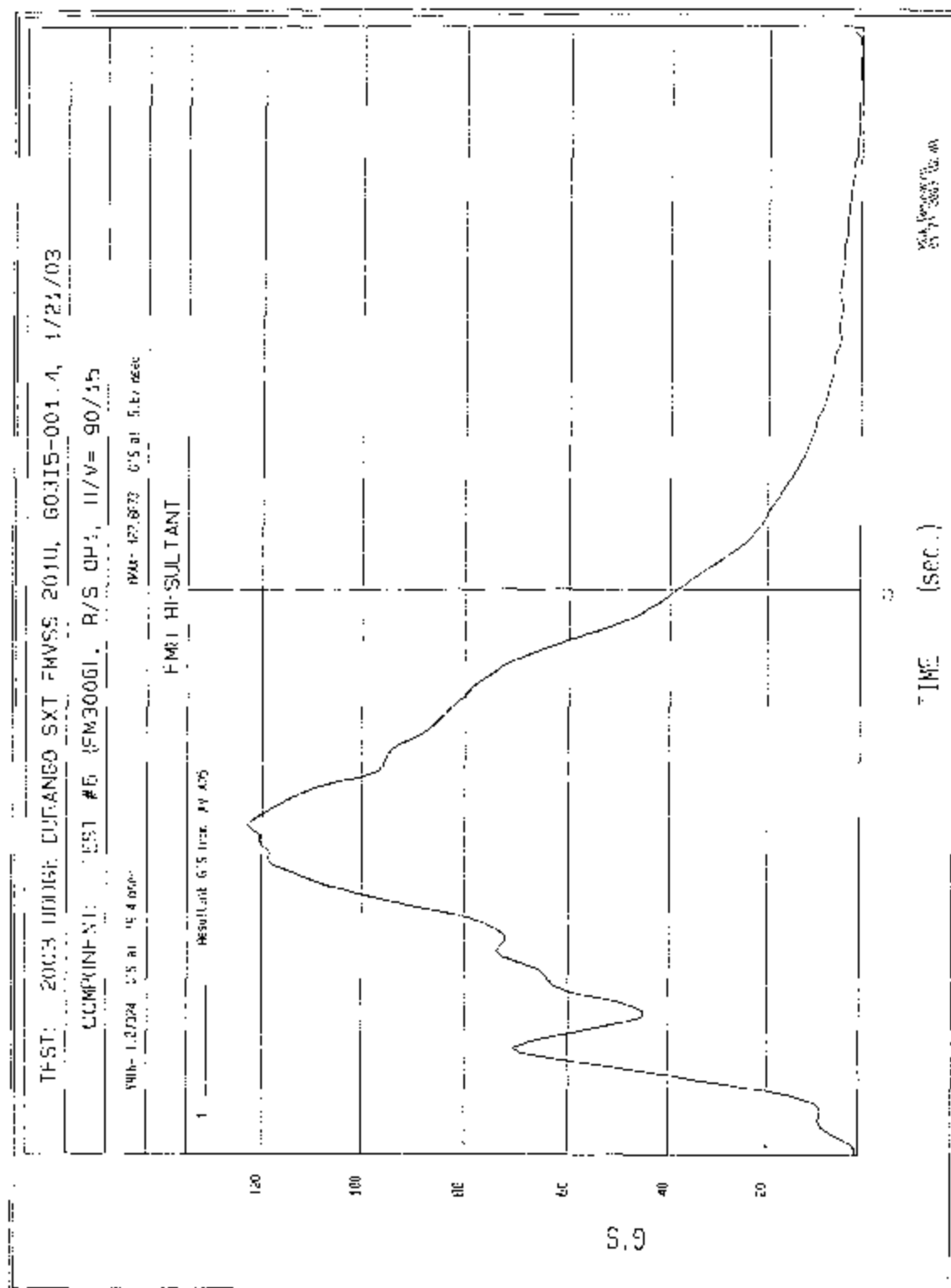
No VISIBLE DAMAGE-

Recorded By: [Signature] Approved By: [Signature] Date: 1/21/03

*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHISA\FM3006AV.AC5
HIC = 508.64 calculated over 7.9 msec
T1 = 1.39 msec T2 = 9.26 msec
*****
HIC(d) = 550
Impact Velocity = 23.6 (kph)
```





TEST: 2003 00004 DURANDG SXT FMVSS 2010.60J15-001 4, 1/21/03

COMPONENT: TEST #6 (FM3000), R/S DP1, H/V 90/15

TIME: 132.7007 mm/s 0.00 mm/s

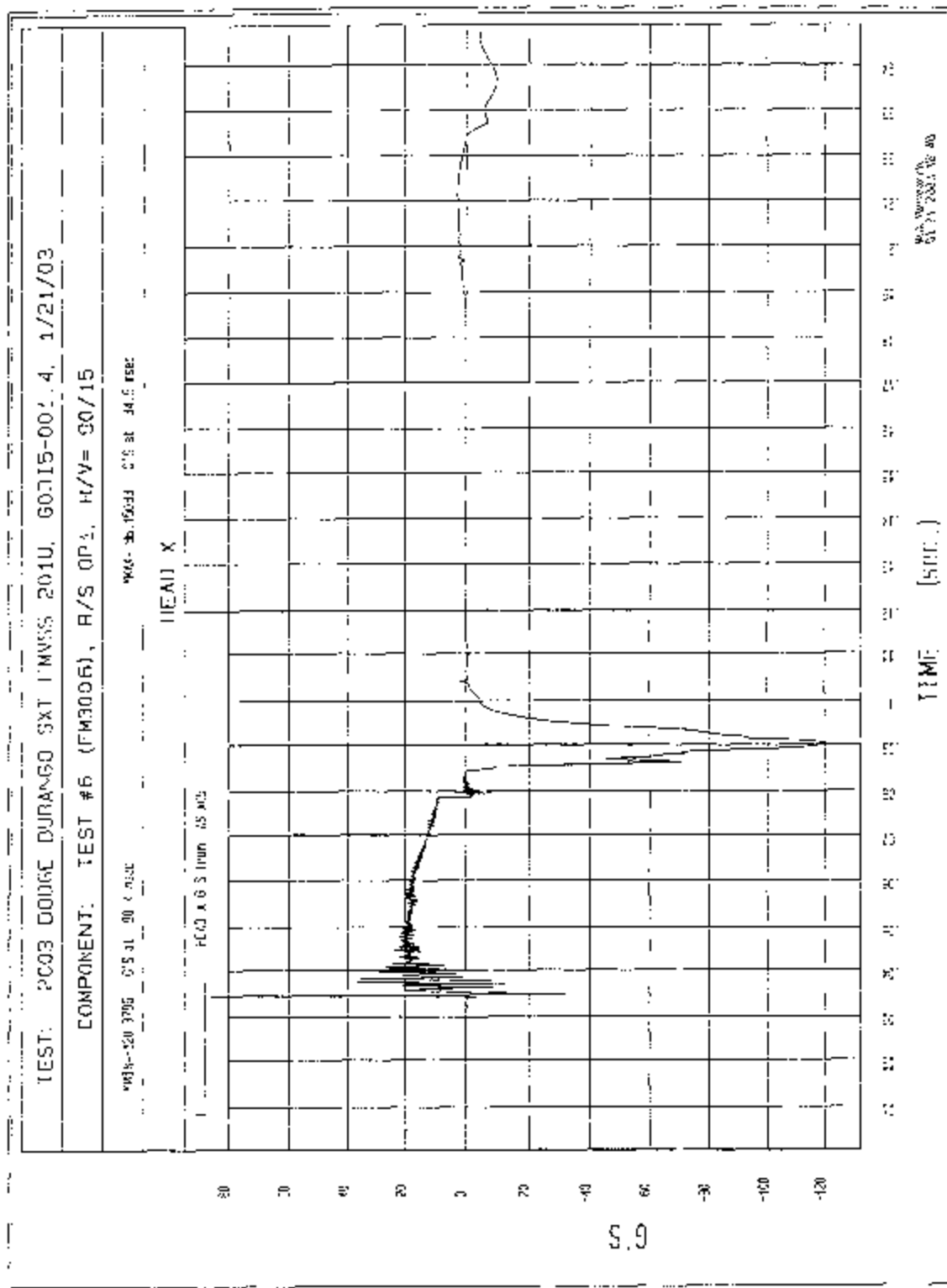
YMOD: 227.4024 mm/s 0.30 mm/s

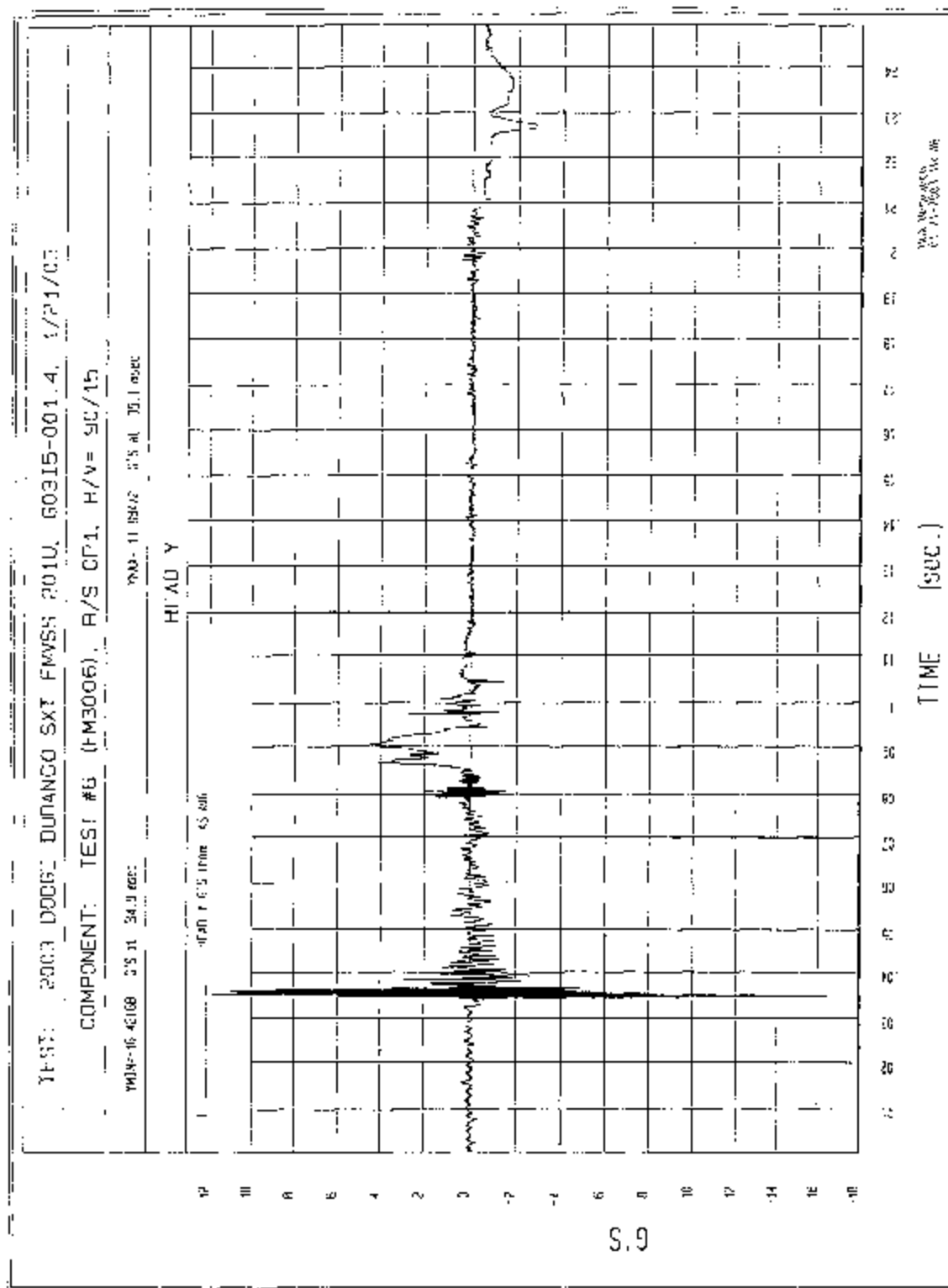
DISPLACEMENT

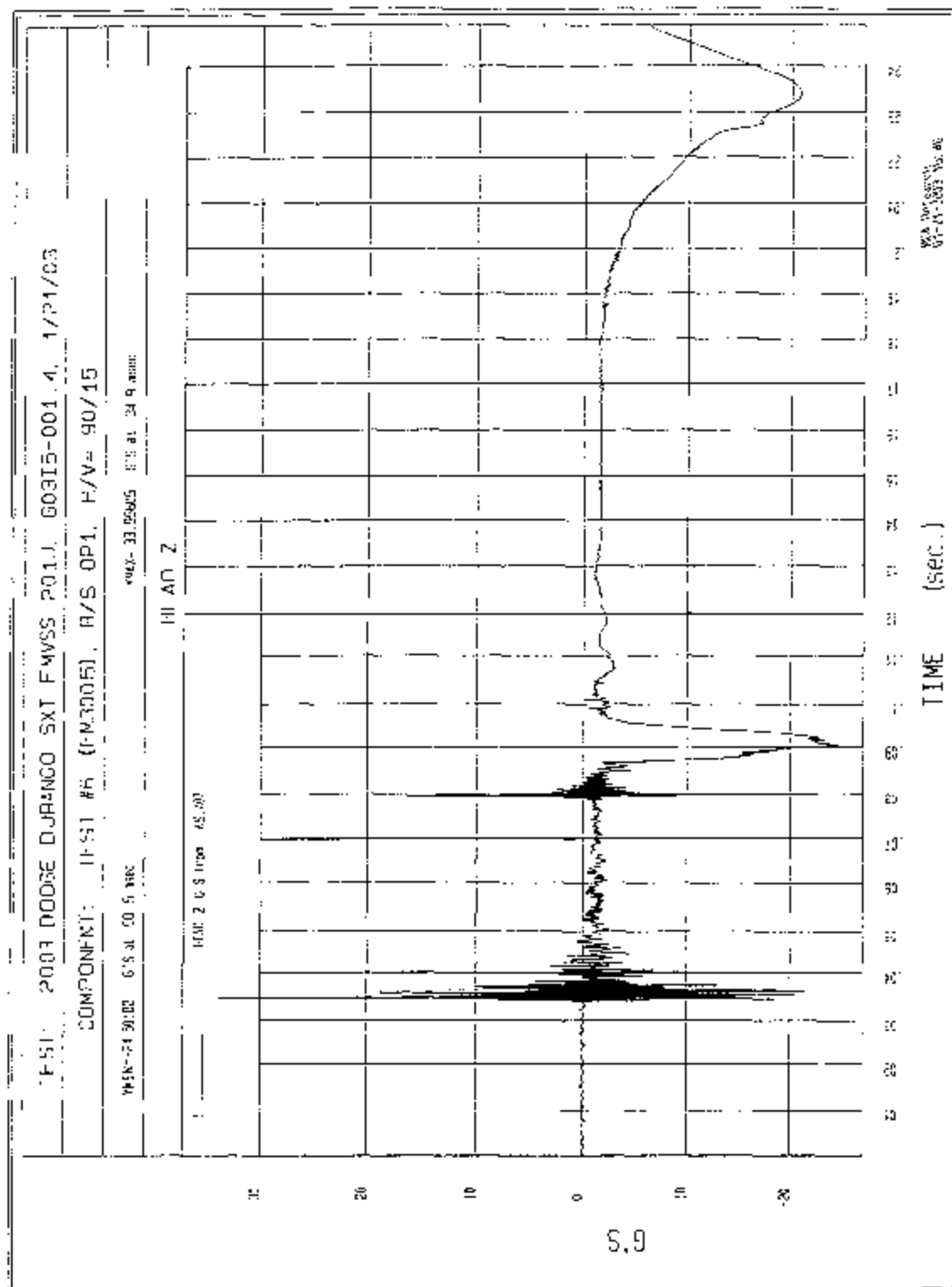
GROSS TEST DATA

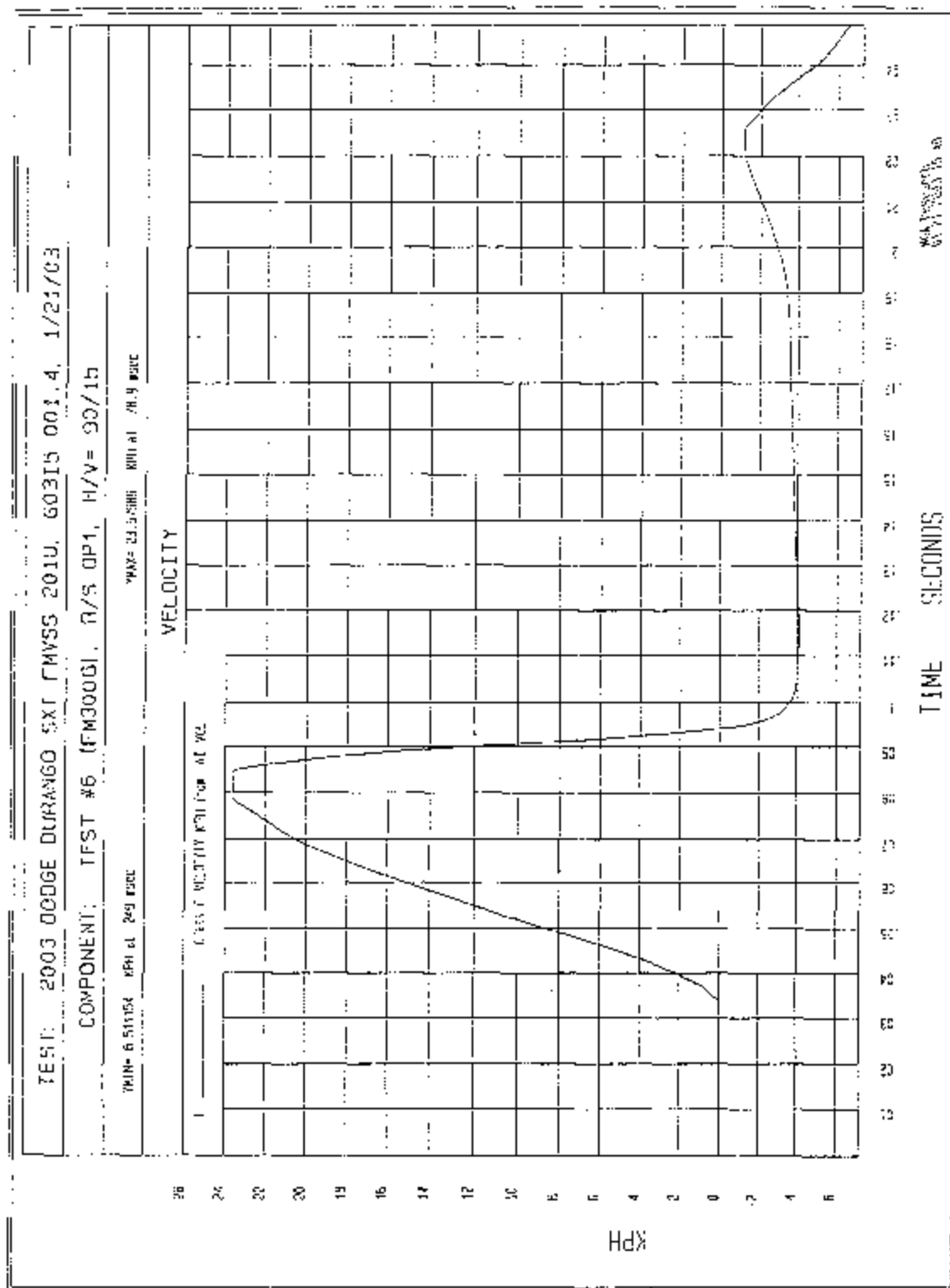
mm

seconds





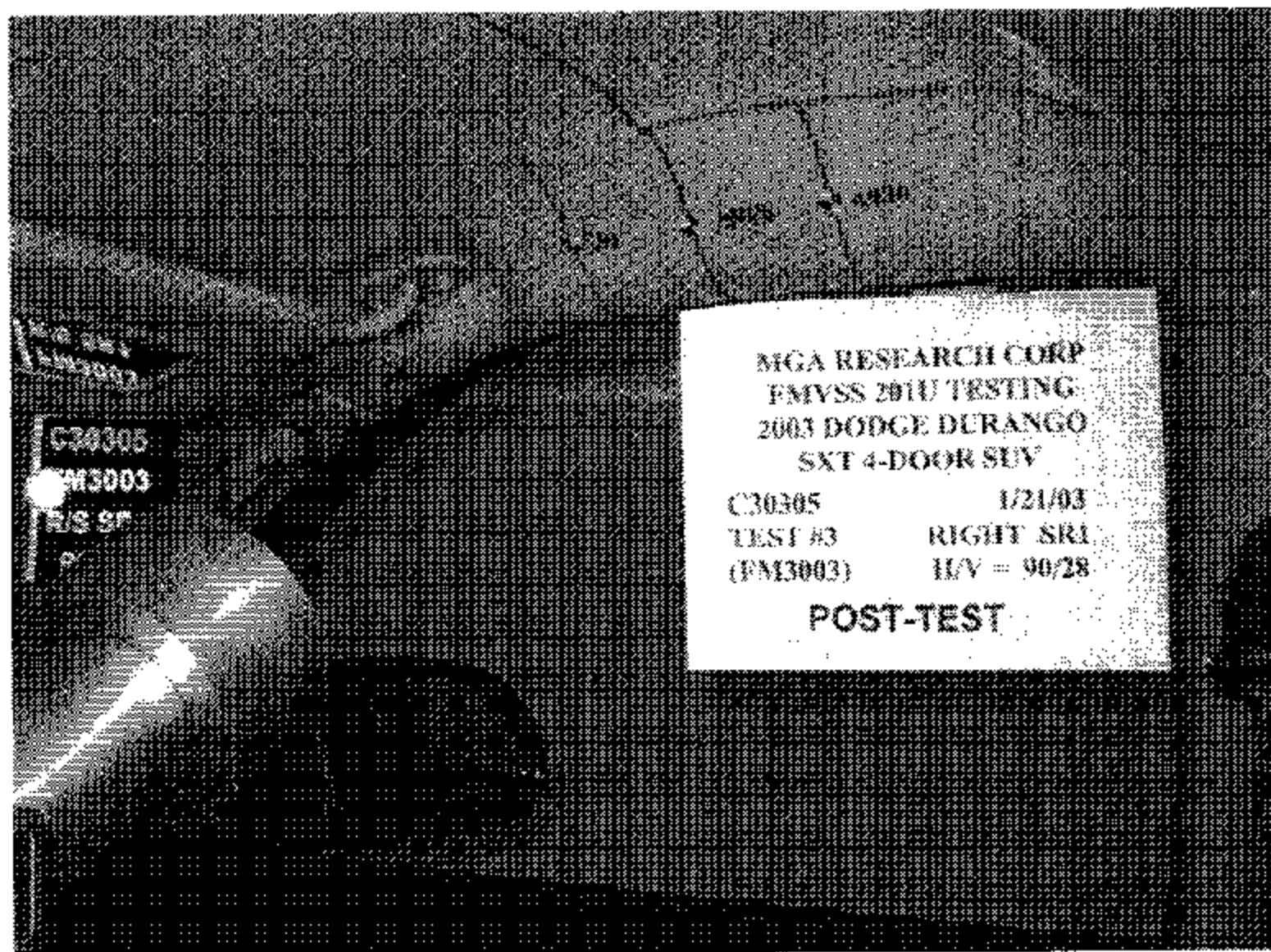




MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #3 RIGHT SRJ
(FM3003) H/V = 90/20

PRE-TEST



MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #3 RIGHT SRI
(FM3003) H/V = 90/28

POST-TEST

MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/21/03
TEST #3 RIGHT SRI
(FM3003) H/V = 90/28

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/13/01
SUPERCEDES: MGATP201U_FRAME #2.3

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NETSA NO: 30303 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

GENERAL TEST PARAMETERS:

Test Number: 3

Target (Vehicle Side): Left SL-1

Temperature: 25 °F/°C

MGA Test Reference No.: FM3003

Humidity: 22 %

Approach Angles: Horizontal 90 °

Time of Test: 1:40 am/pm pm

Vertical 28 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
423	310	8.8	237	14	4

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36157	-108.2	1.21	1.21
Y	6	J36152	102.0	1.23	1.23
Z	7	J36352	97.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: [Signature] Date: 11/6/05

*Only necessary for NETSA (Government) Compliance testing.

RESULTS OF NIC36 PROGRAM

input file is \KHTSA\FM3003AV.A05

HIC = 339.74 calculated over 6.8 msec

T1 = 3.49 msec T2 = 12.25 msec

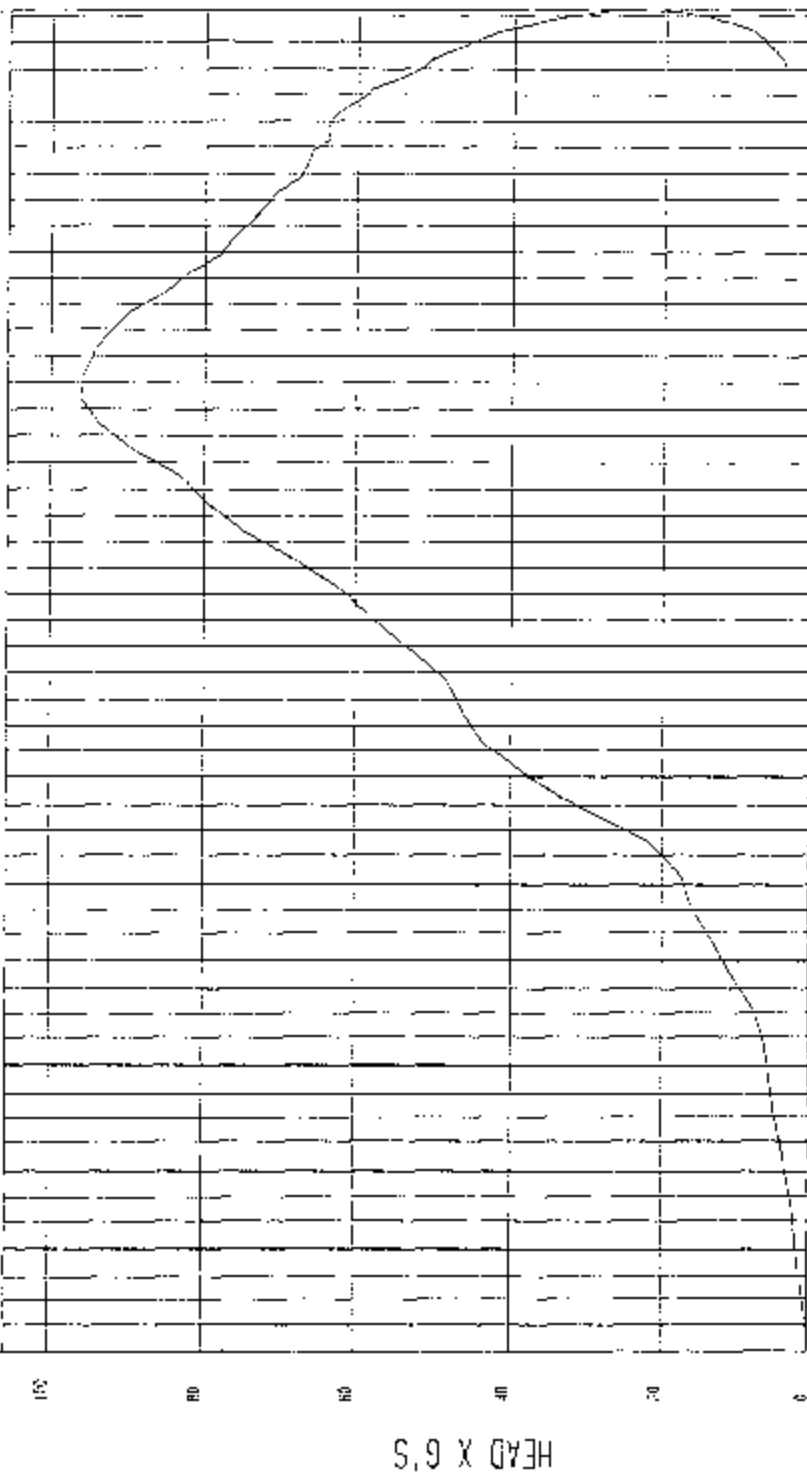
HIC(d) = 423

Impact Velocity = 23.7 (kph)

TEST: 2003 DODGE DURANGO SXT FMVSS 2010, G0314-001.4, 1/21/03

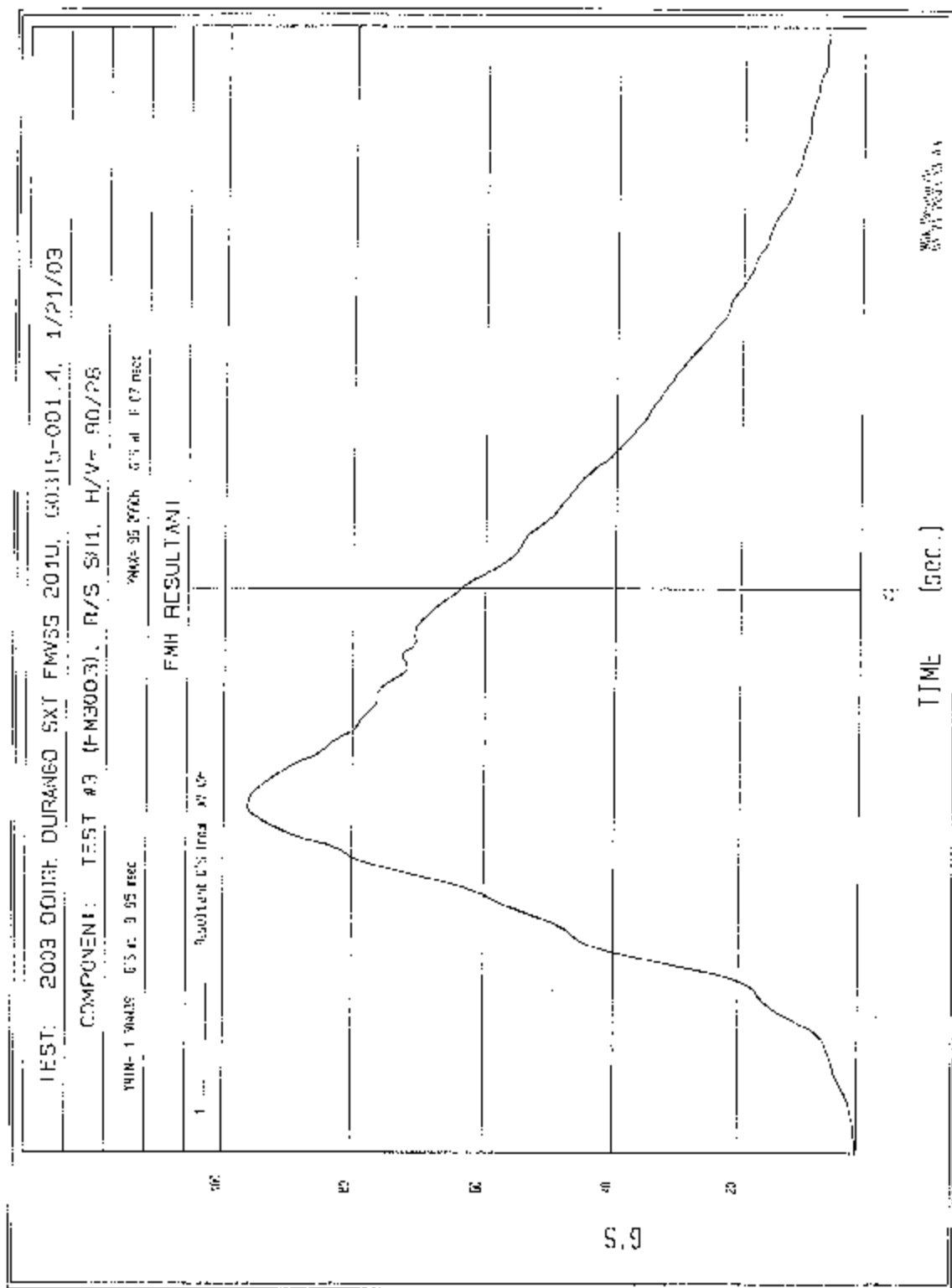
COMPONENT: TEST #3 (FMVSS03), R/S SP1, H/V, 95/26

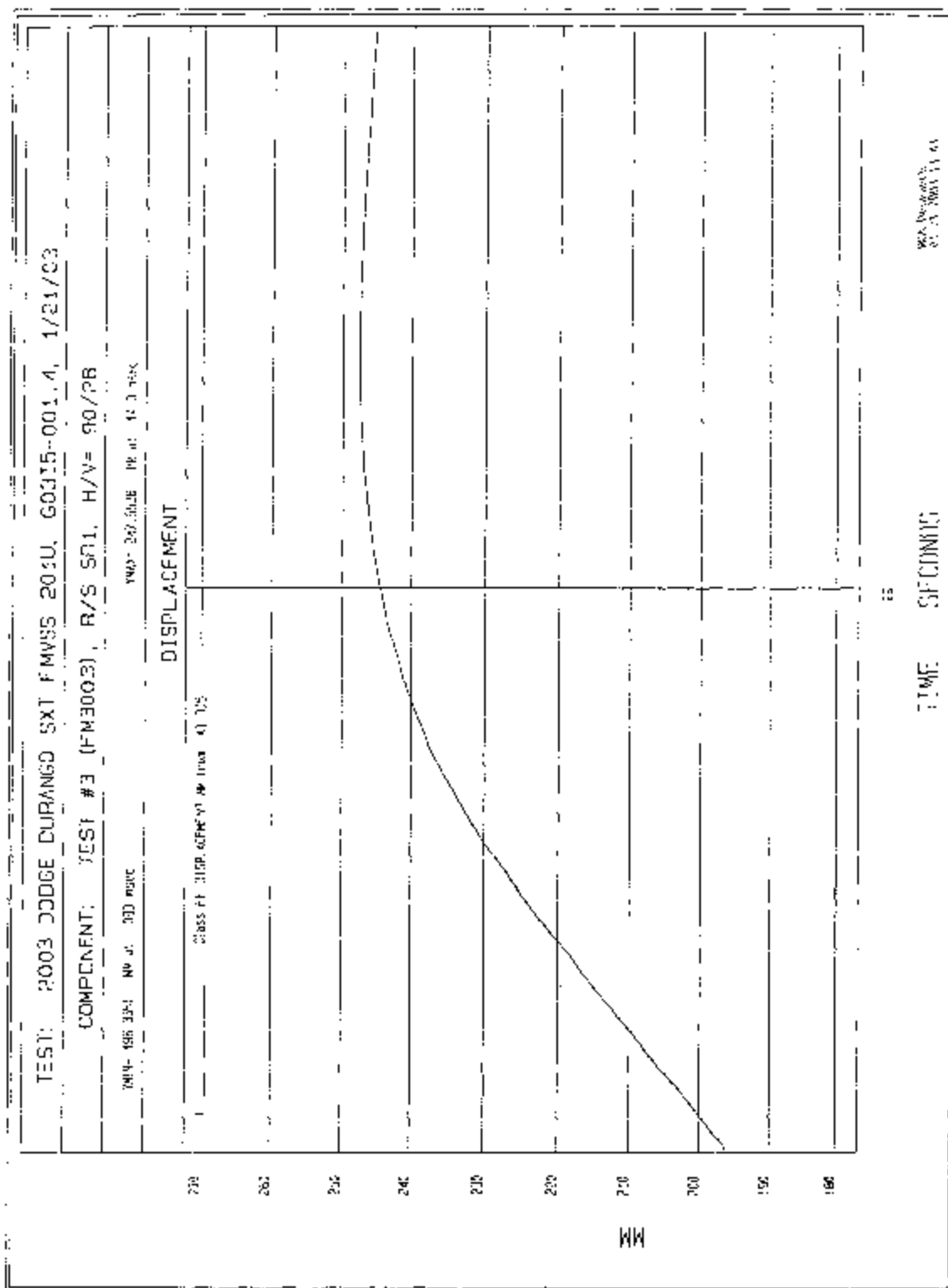
HEAD X AS A FUNCTION OF DISPLACEMENT

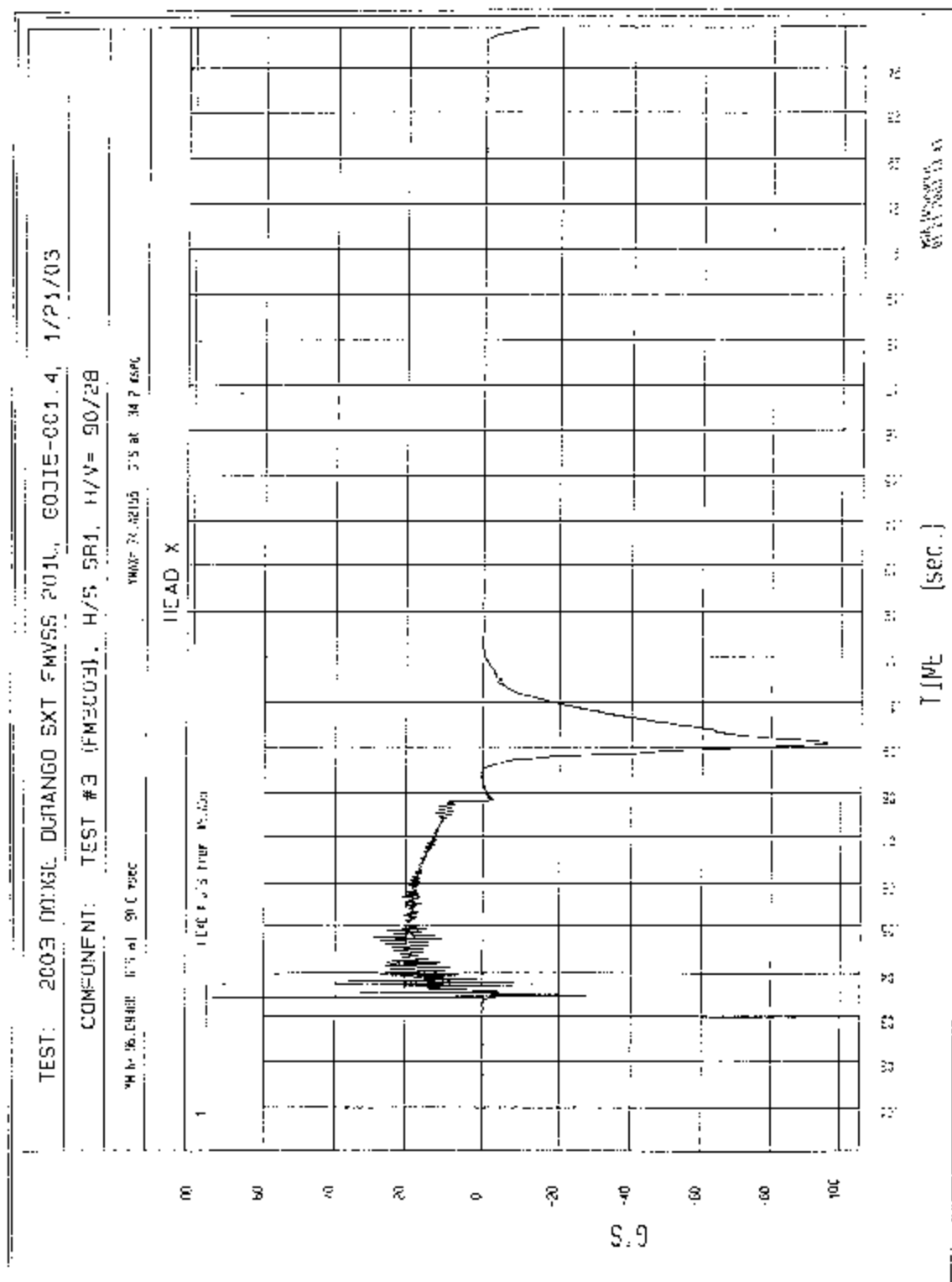


WHA 00000000
01/21/03 11:10

DISPLACEMENT MM





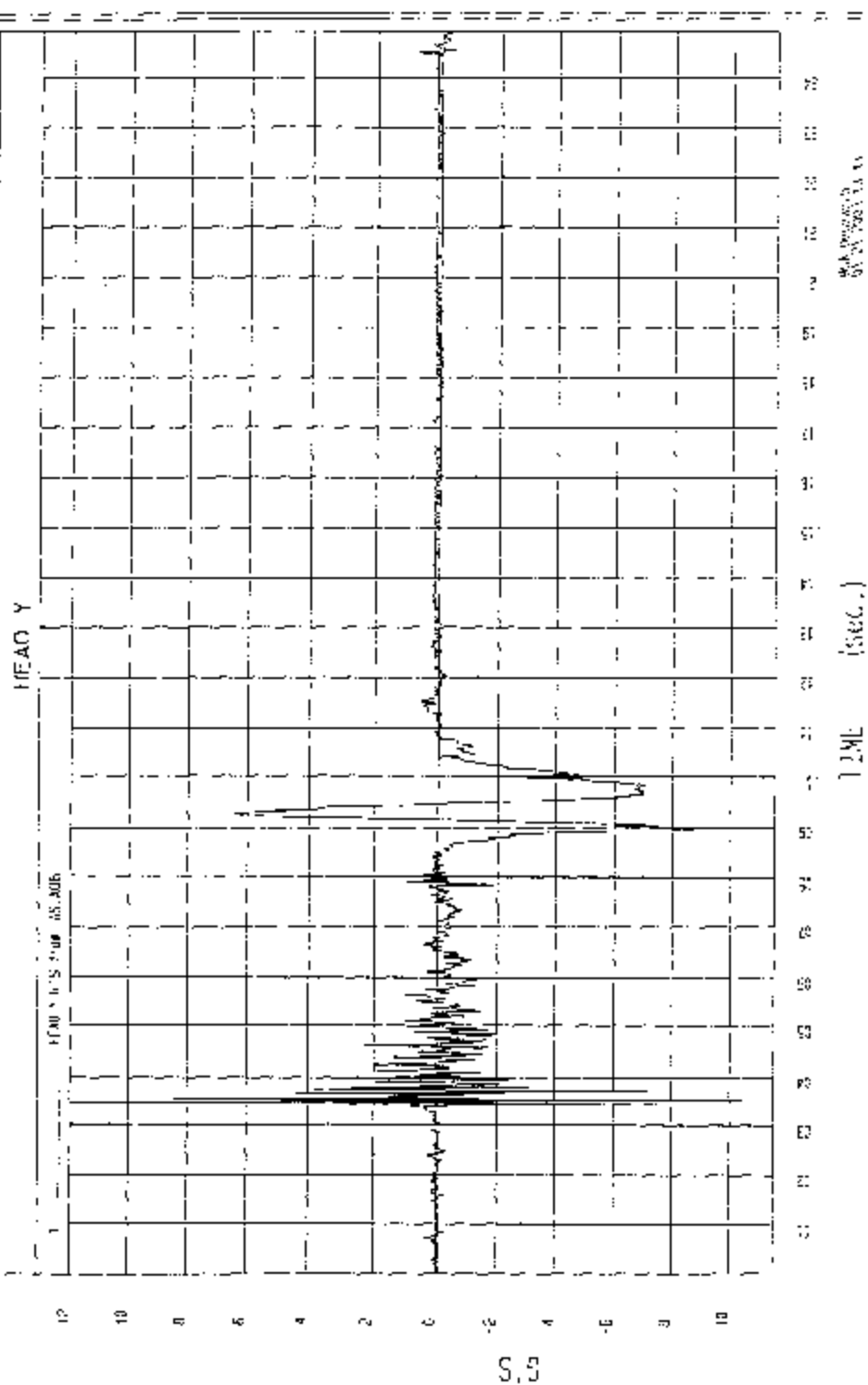


TEST: 2003 DODGE DURANGO SXT FMVSS 201U, DOT11-001.4, 1/21/03

COMPONENT: TEST #3 (M3000), R/S SR1, H/V= 90/20

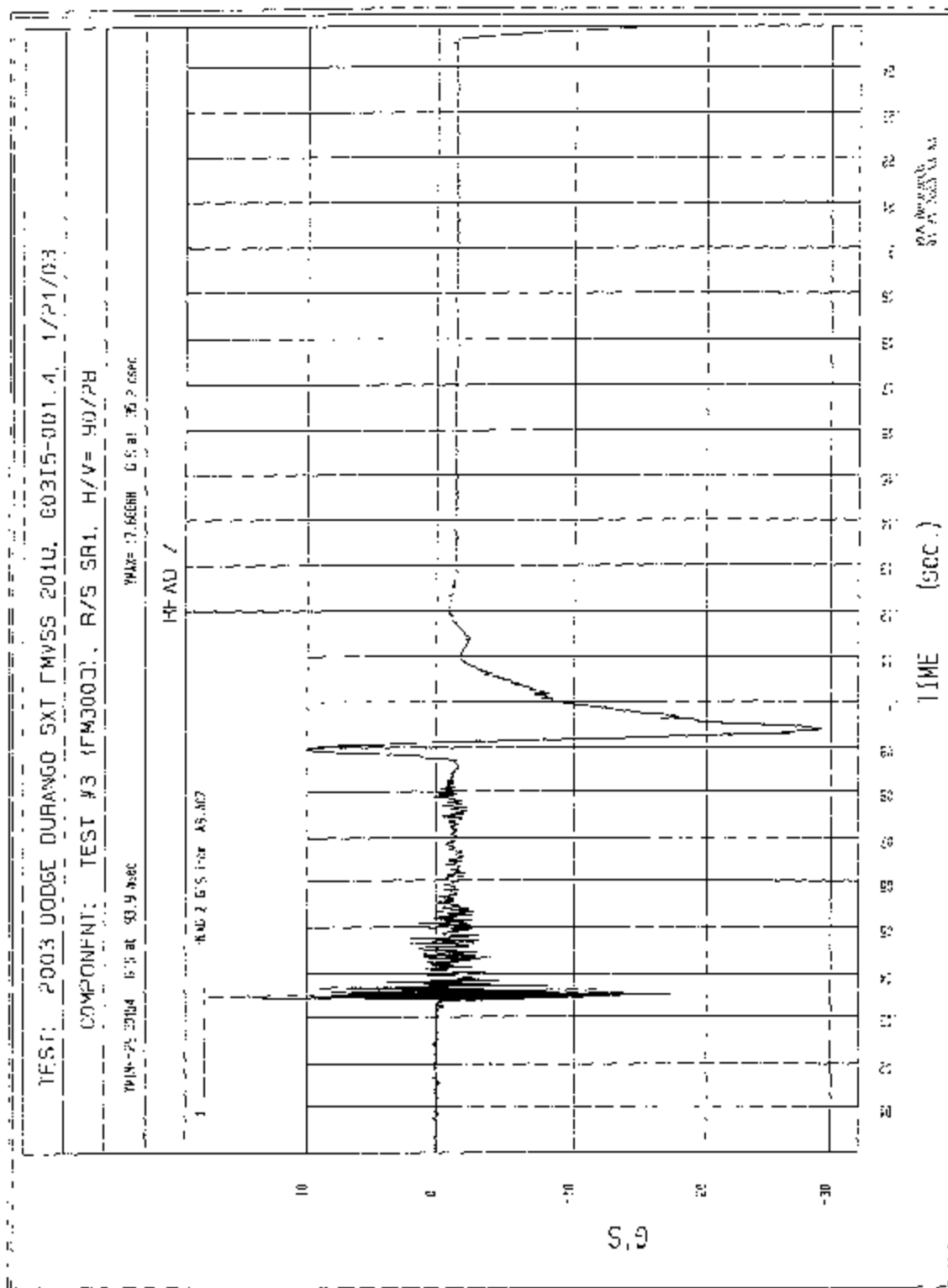
WTR=10 440Pa 6'S at 34.9 ms/c

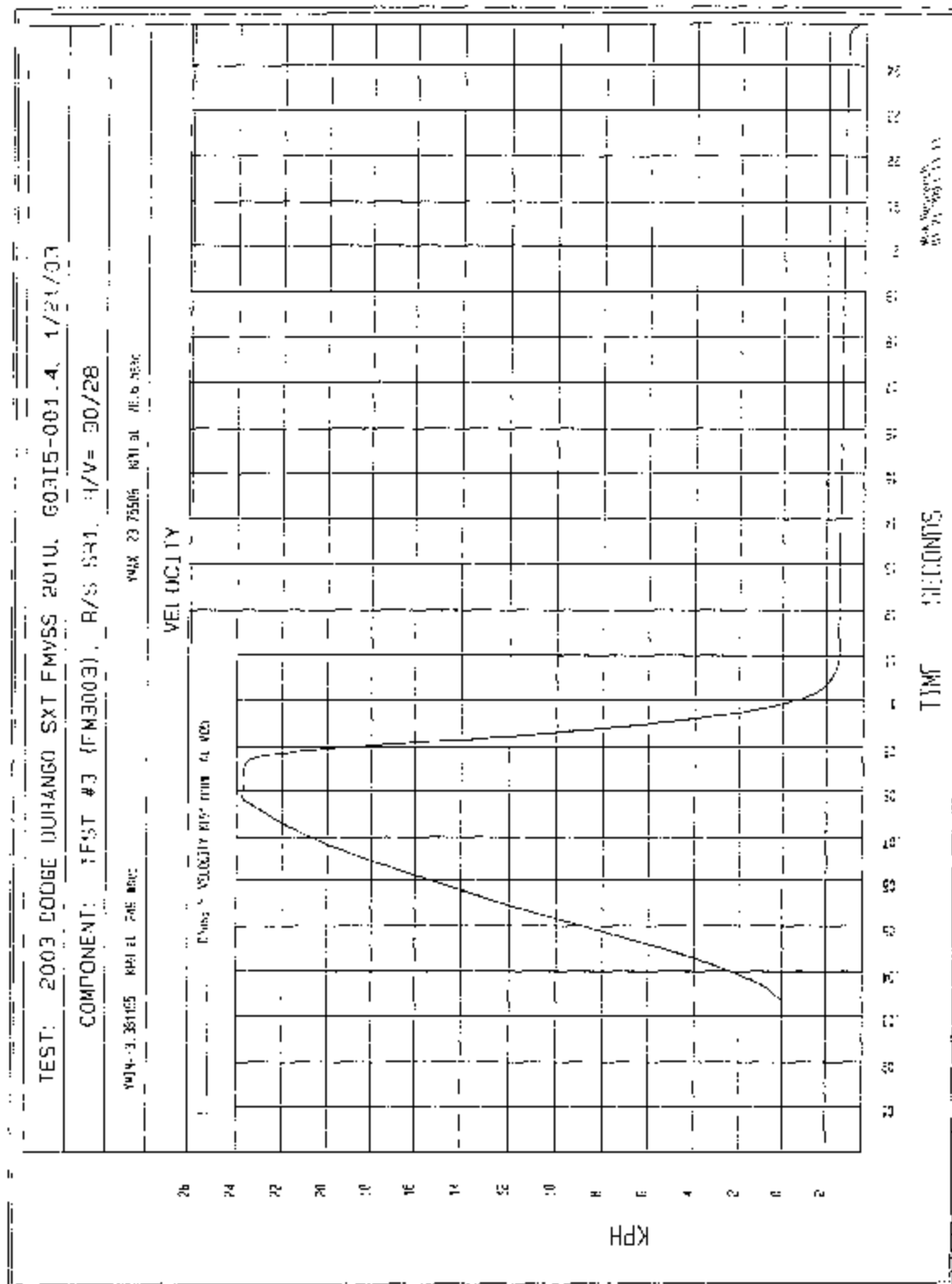
TRAX=11.9402 3'S at 34.4 ms/c



WTR=10 440Pa 6'S at 34.9 ms/c

TRAX=11.9402 3'S at 34.4 ms/c





MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305	1/22/03
TEST #8	LEFT URI
(JEM3008)	EEV = 270/33

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #8 LEFT UR1
(FM3008) H/V = 270/33

POST-TEST

C30305
FM3008
LS UR1
270/33

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305

1/22/03

TEST #8

LEFT UR1

(FM3008)

H/V = 270/33

POST-TEST

MICHIGAN OPERATIONS
DATE: 10-18-01
SUPERCEDES: MGATP201U_FRAME#23

DOC. NO.: MGATP201U_FRAME#2
REVISION NO.: 4
PAGE 9 of 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C3045 VEHICLE YR/MAKE/MODEL: 2003 DODGE DURANGO

GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side) Left URI

Temperature: -22 °C

MGA Test Reference No.: FM300B

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 10:40 am

Vertical: 33 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	<u>Left</u> /Right Pt. O
<u>432</u>	<u>419</u>	<u>10.2</u>	<u>23.9</u>	<u>37</u>	<u>5</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>Y</u>	<u>5</u>	<u>J35923</u>	<u>-100.9</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35916</u>	<u>100.7</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J35913</u>	<u>100.8</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

HEADLINE DEFORMATION

Recorded By: [Signature] Approved By*: [Signature] Date: 1/22/03

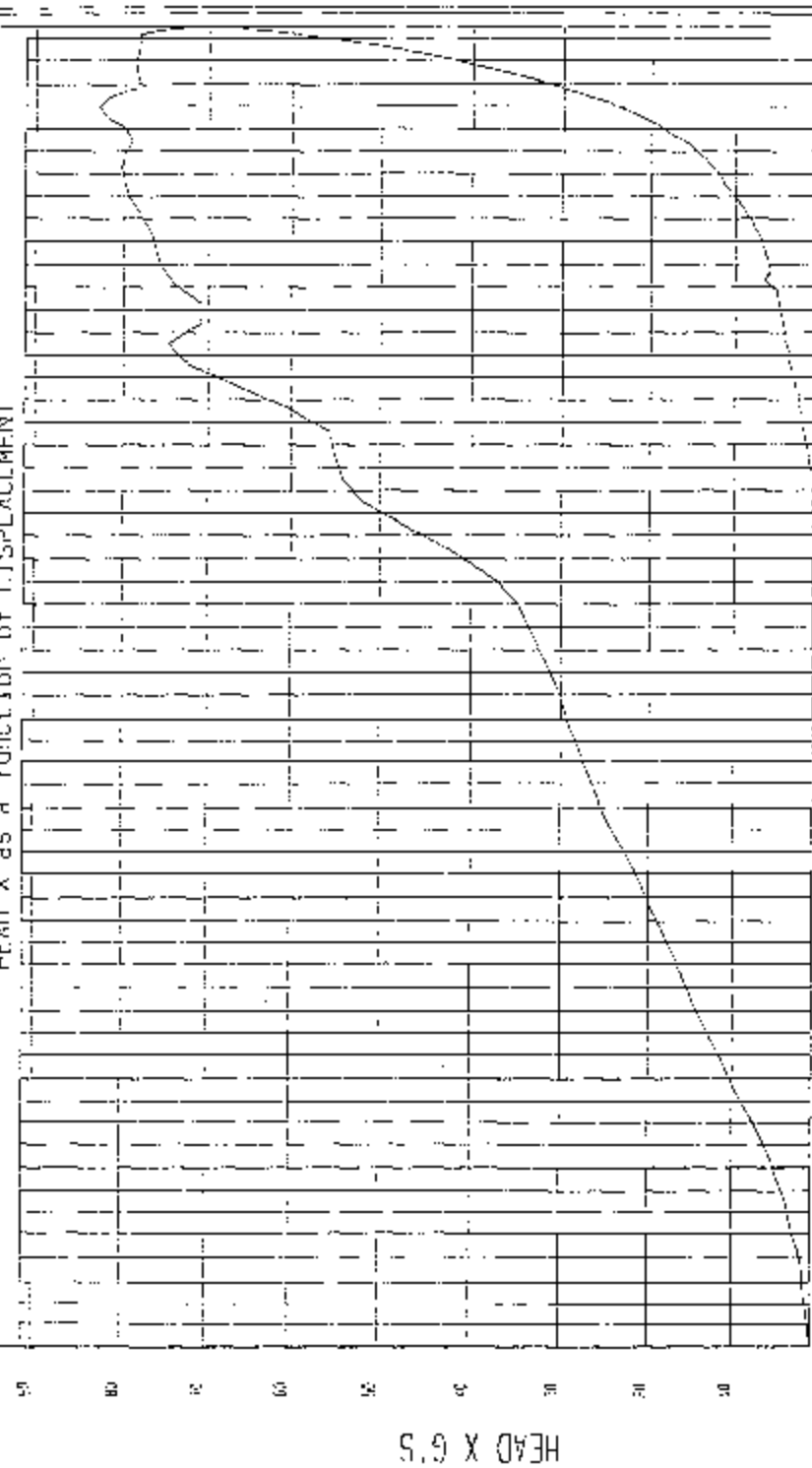
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \NHTRA\FM3008AV.A05
The HIC = 418.48 calculated over 10.2 msec
T1 = 5.58 msec T2 = 13.74 msec
*****
HIC(d) = 462
Impact Velocity = 23.9 (kph)
```

TEST: 2002 000001 DURANGO SXT FMVSS 2010, 60315-001.4, 1/12/03

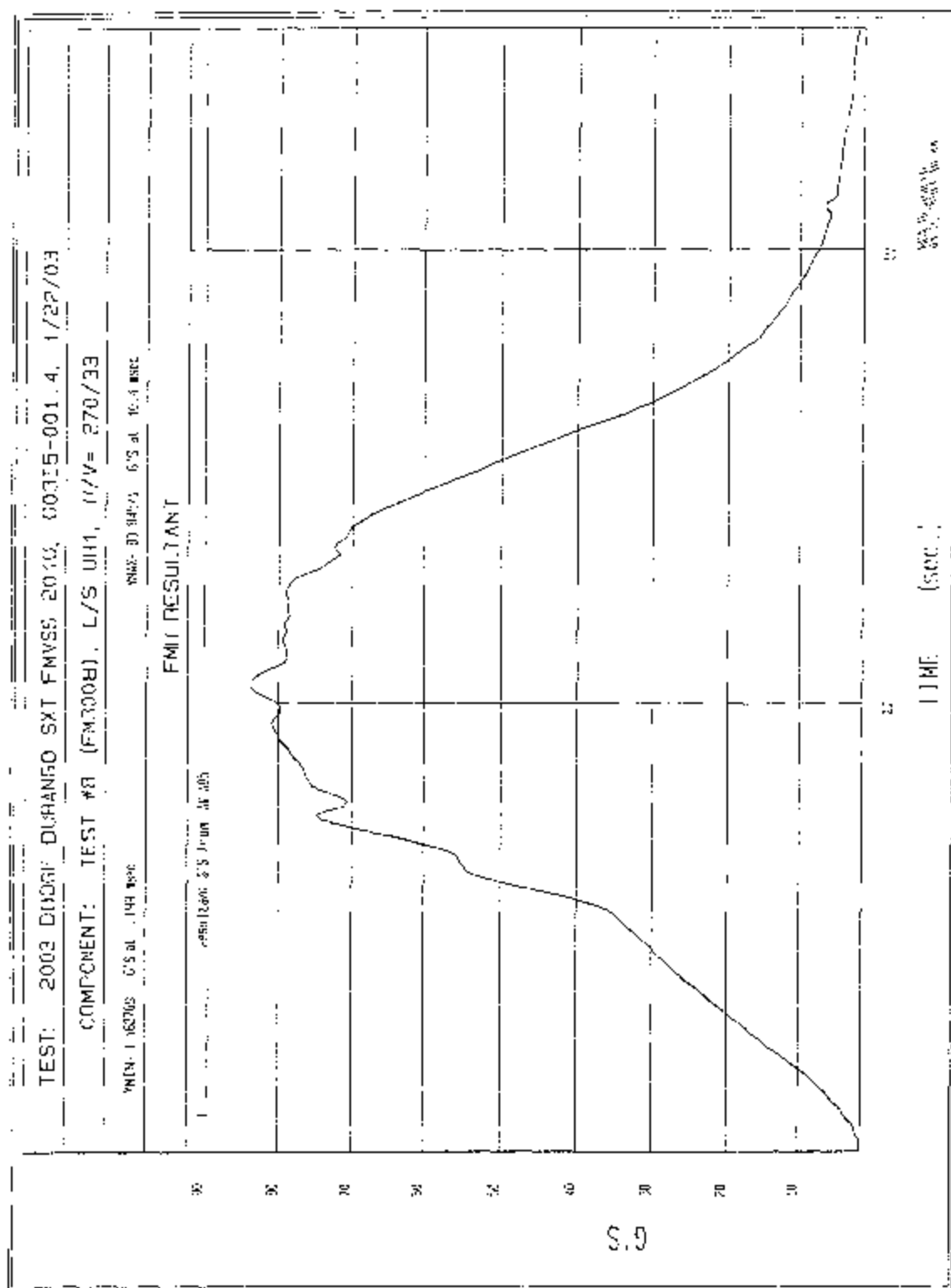
COMPONENT: TEST A8 (FM300B), L/S UH1, 11/V= 270/33

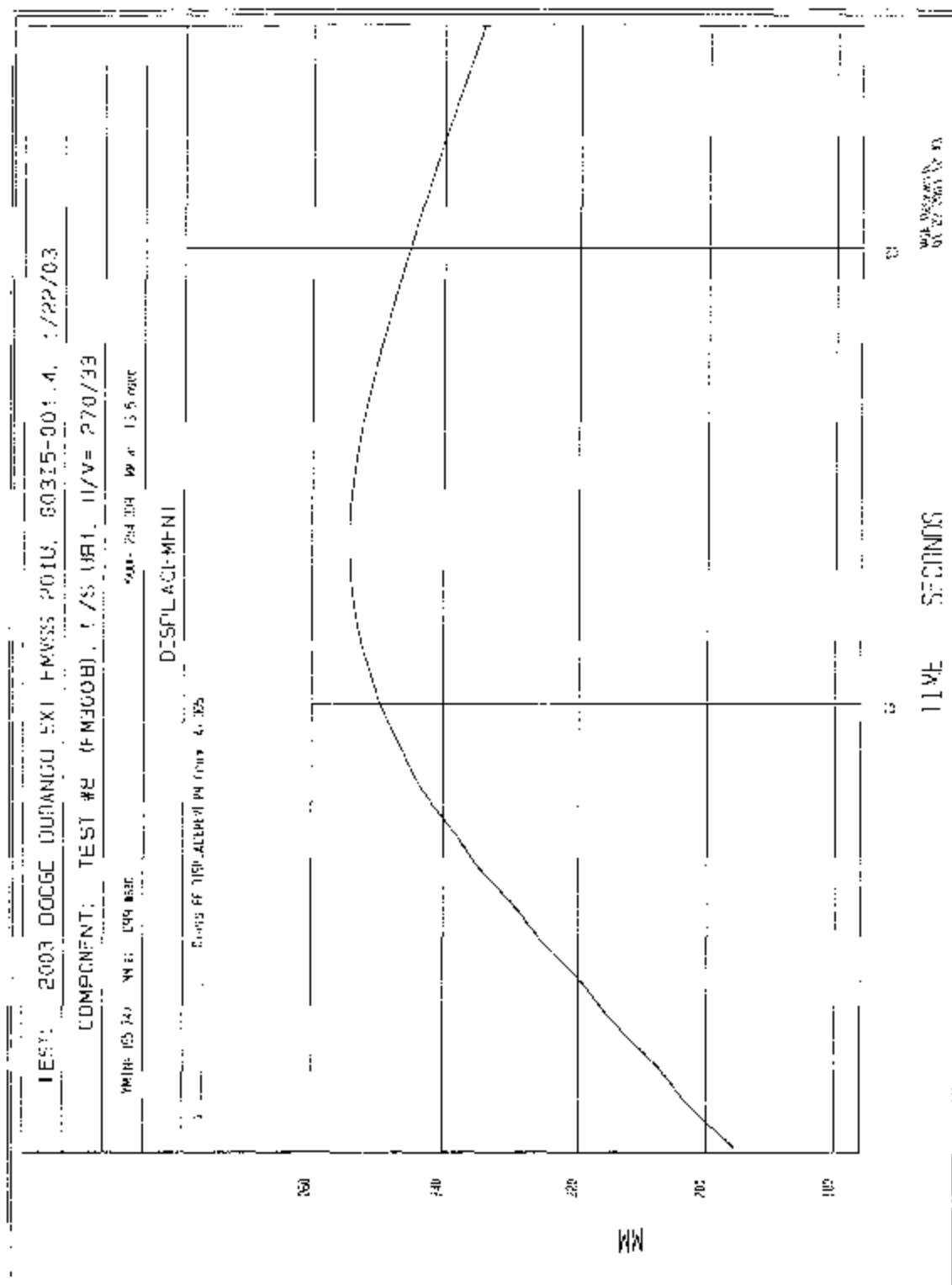
HEAD X as a function of DISPLACEMENT

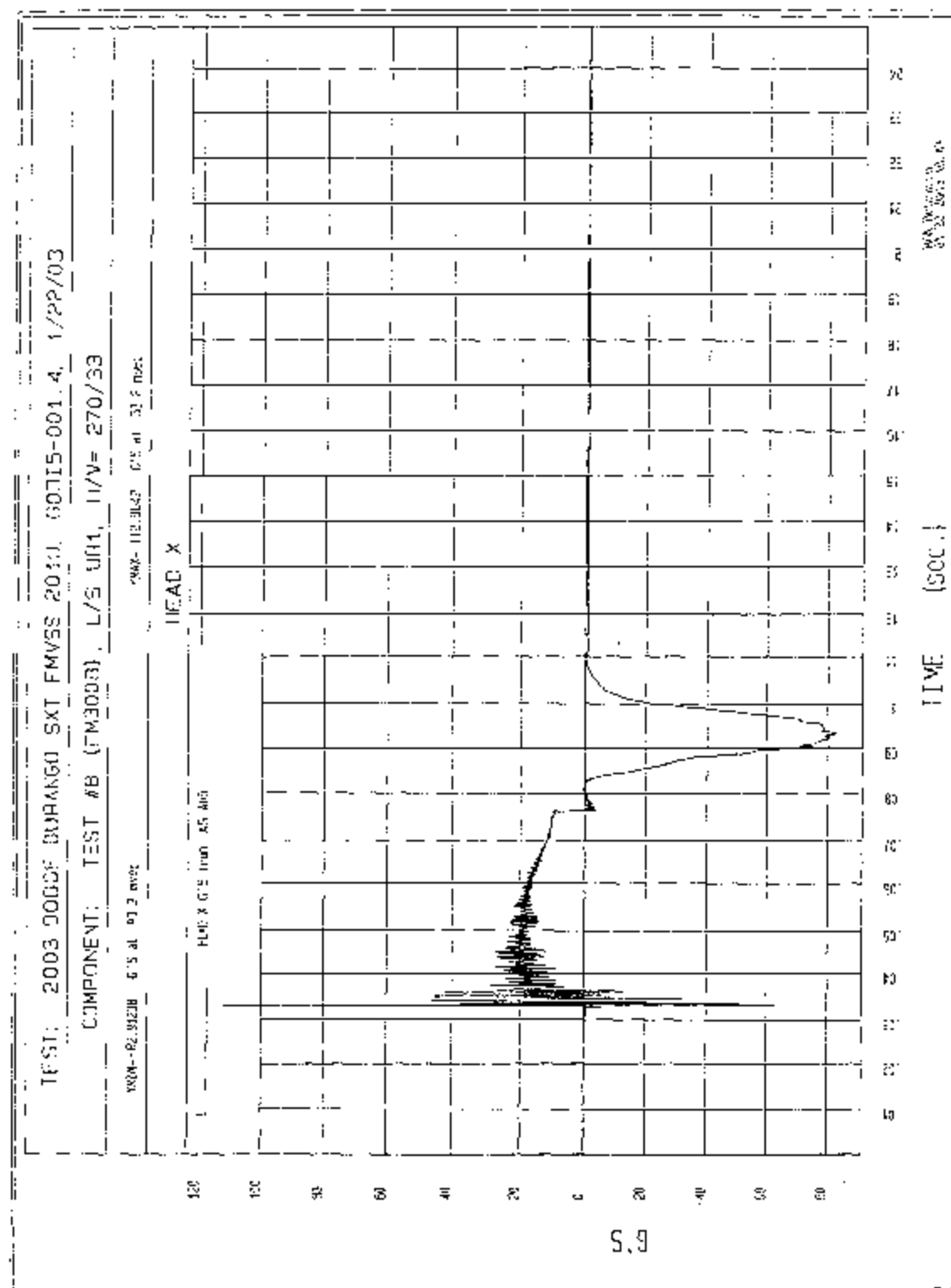


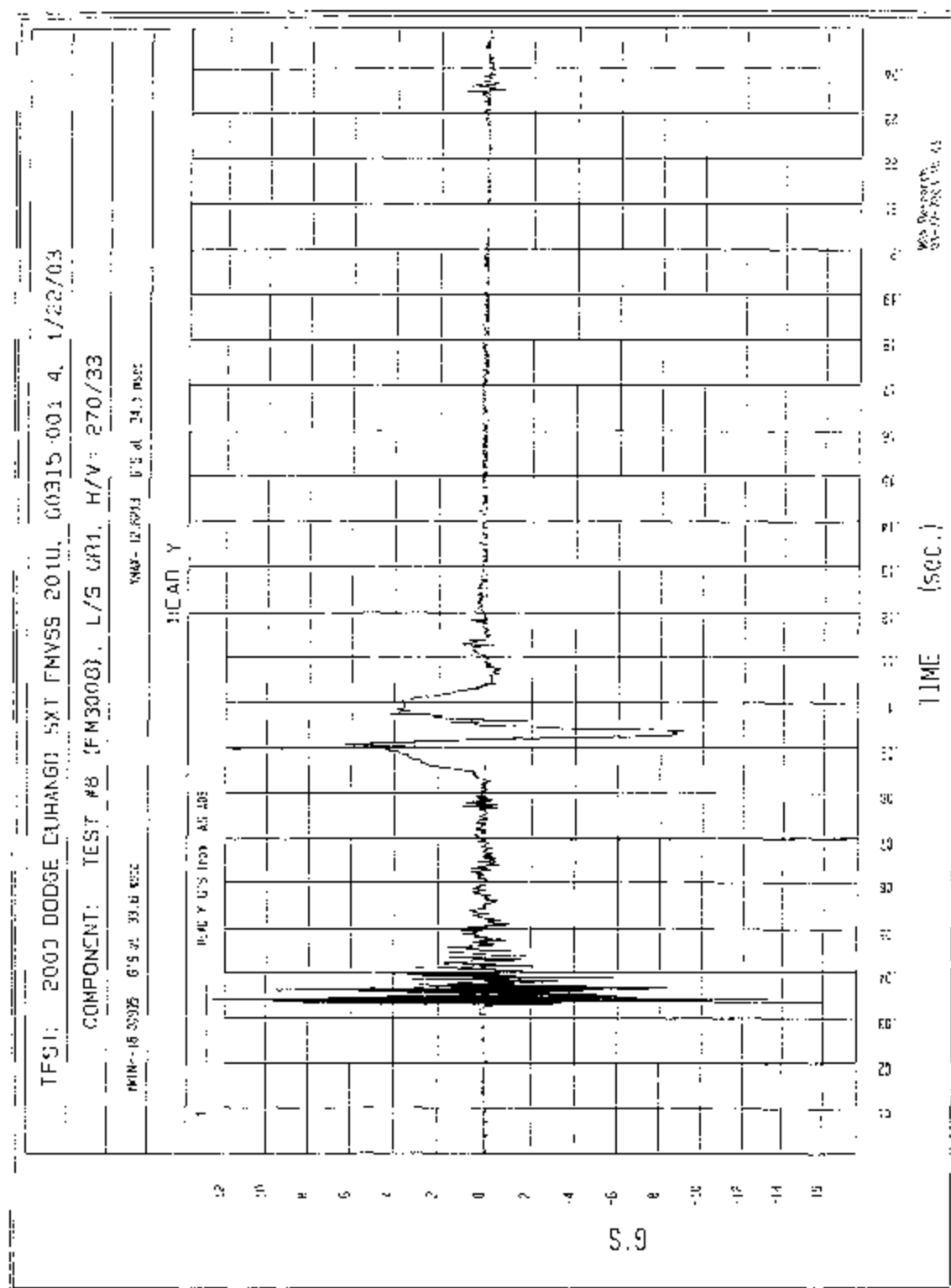
DISPLACEMENT MM

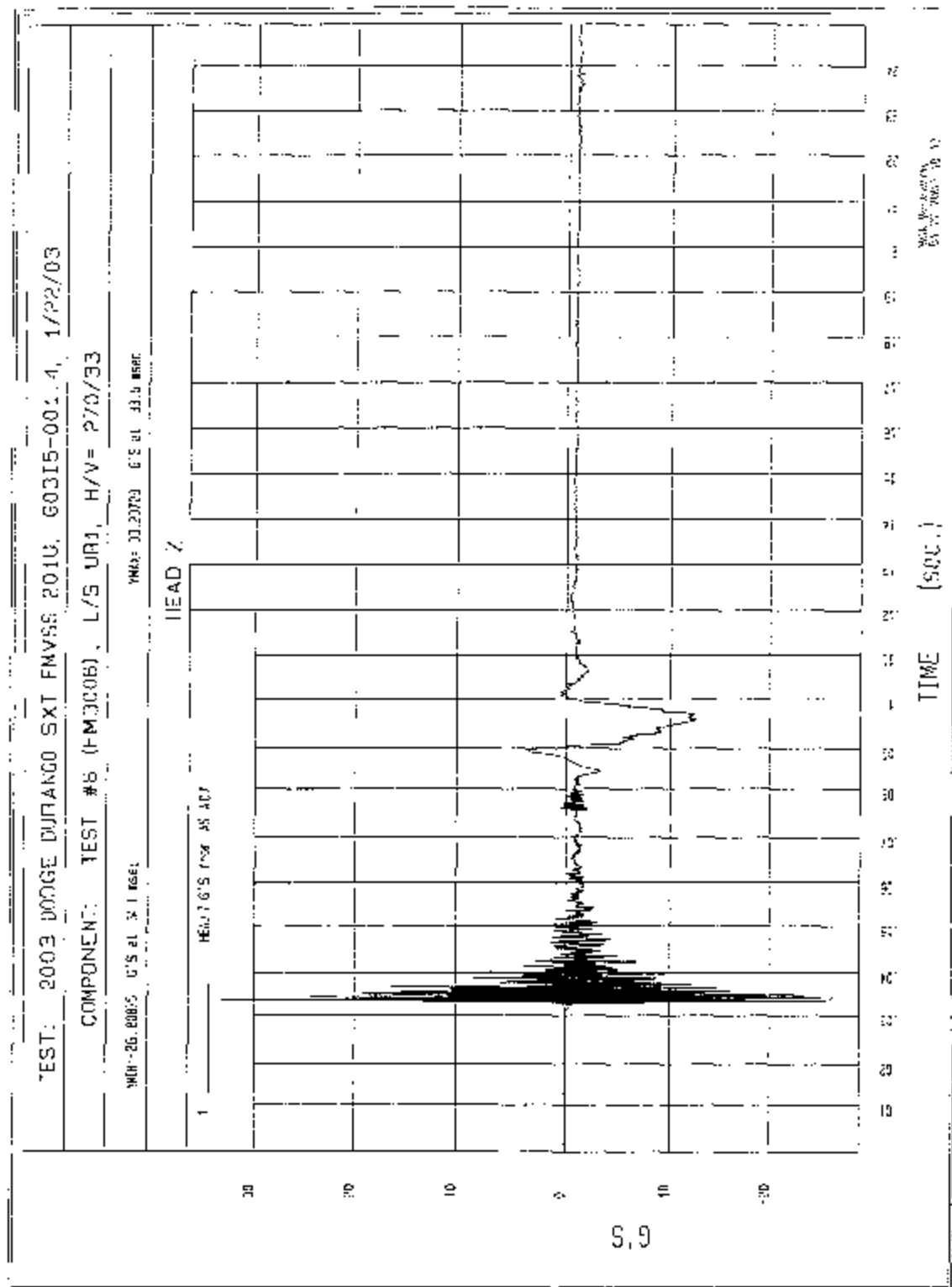
100.000000
0.000000

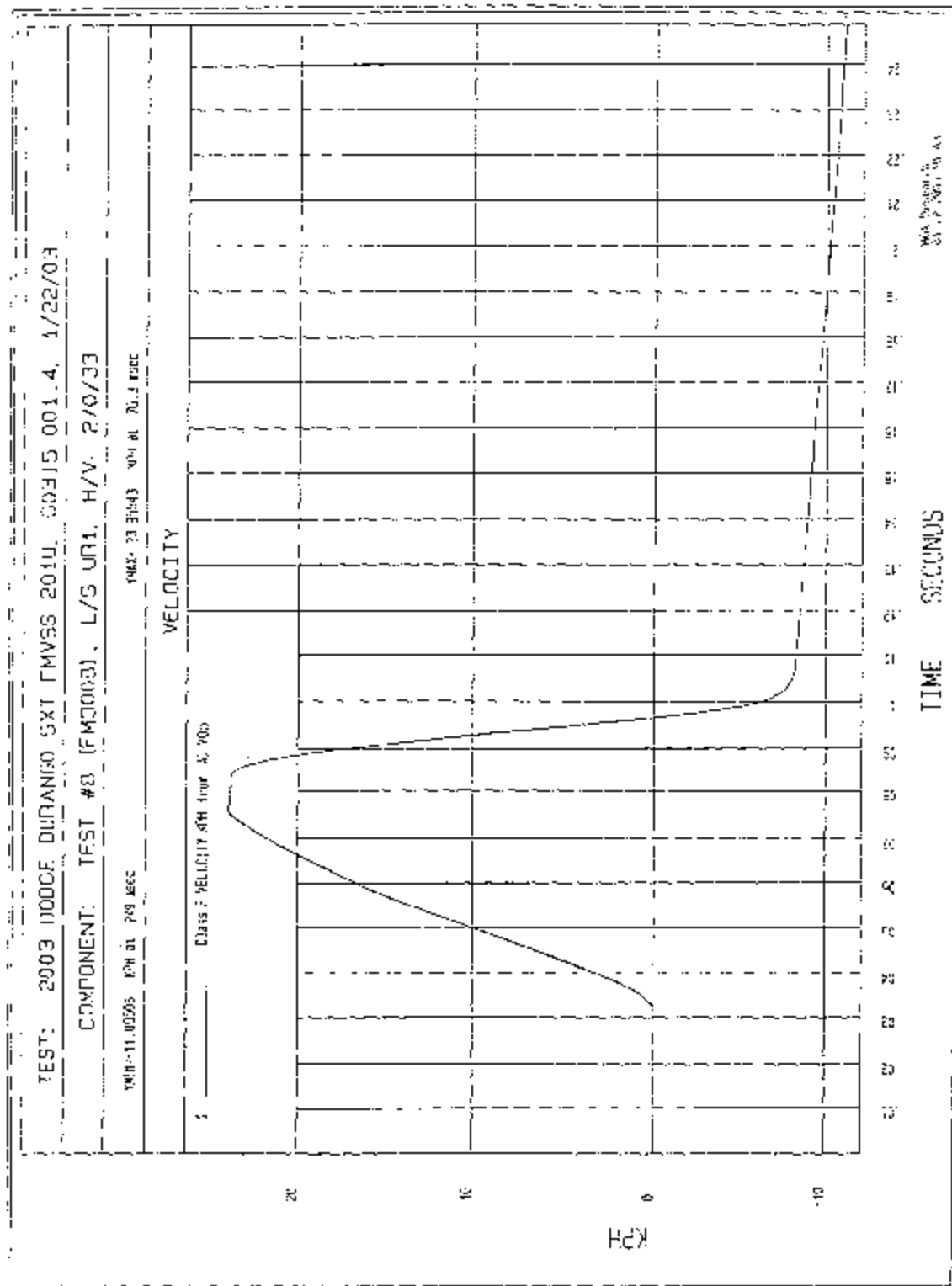


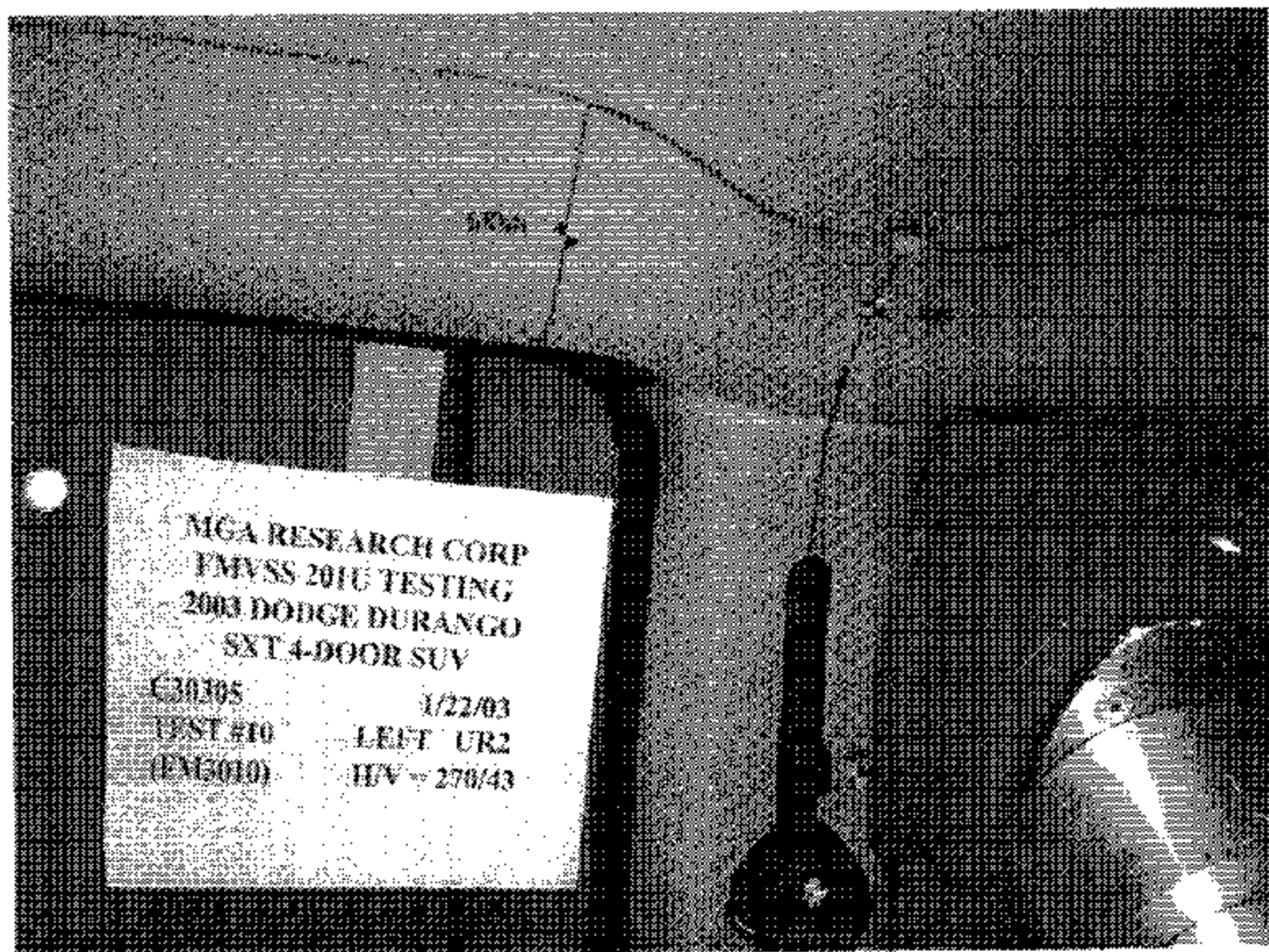












MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #10 LEFT UR2
(FM3010) HV = 270/43

MGA RESEARCH CORP
FMVSS 201U TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #10 LEFT UR2
(FM3010) H/V = 270/43

POST-TEST

MGA RESEARCH CORP
FMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30305 1/22/03
TEST #10 LEFT UR2
(FM3010) H/V = 270/43

POST-TEST

MICHIGAN OPERATIONS
DATE: 10/18/01
SUPERCEDES: MGATP201U_FRAME 12.5

DOC. NO.: MGATP201U_FRAME 12
REVISION NO.: 4
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SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO. C30305 VEHICLE YR/MAKE/MODEL: 2003 OLIVE DODGE

GENERAL TEST PARAMETERS:

Test Number: 10

Target (Vehicle Side), Left Right 202

Temperature: 22 °F 70

MGA Test Reference No.: FM30710

Humidity: 22 %

Approach Angles: Horizontal 270 °

Time of Test: 12:46 am pm

Vertical 43 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	FIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>826</u>	<u>875</u>	<u>36</u>	<u>23.7</u>	<u>30</u>	<u>4</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35424</u>	<u>-93.1</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35419</u>	<u>95.3</u>	<u>1.23</u>	<u>1.25</u>
<u>Z</u>	<u>7</u>	<u>J35051</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By*: [Signature] Date: 1/22/03

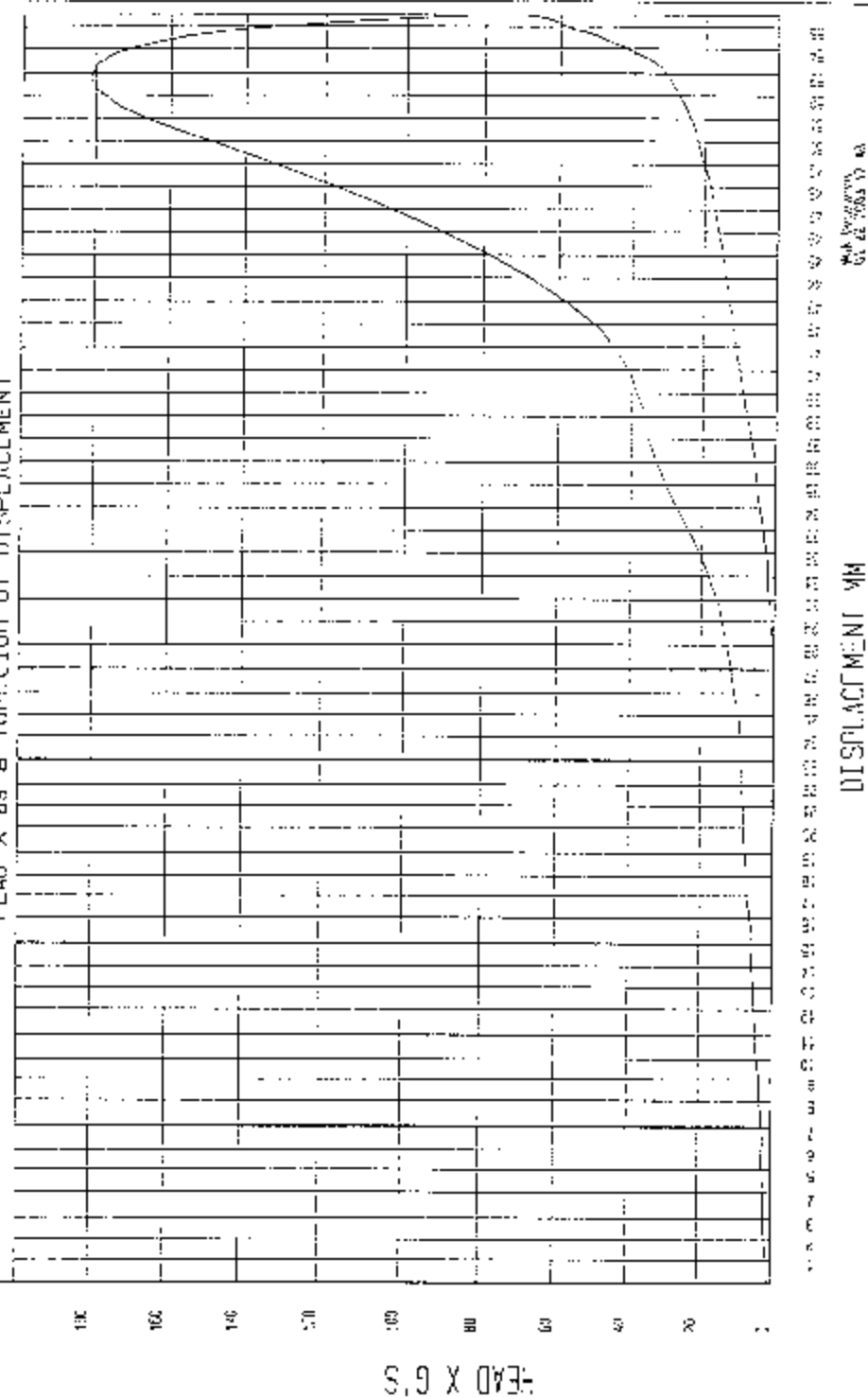
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHISA\FM3010AV.ACS
HIC = 874.50 calculated over 3.6 msec
T1 = 7.27 msec T2 = 10.86 msec
*****
HIC(d) = 626
Impact Velocity = 23.7 (kph)
```

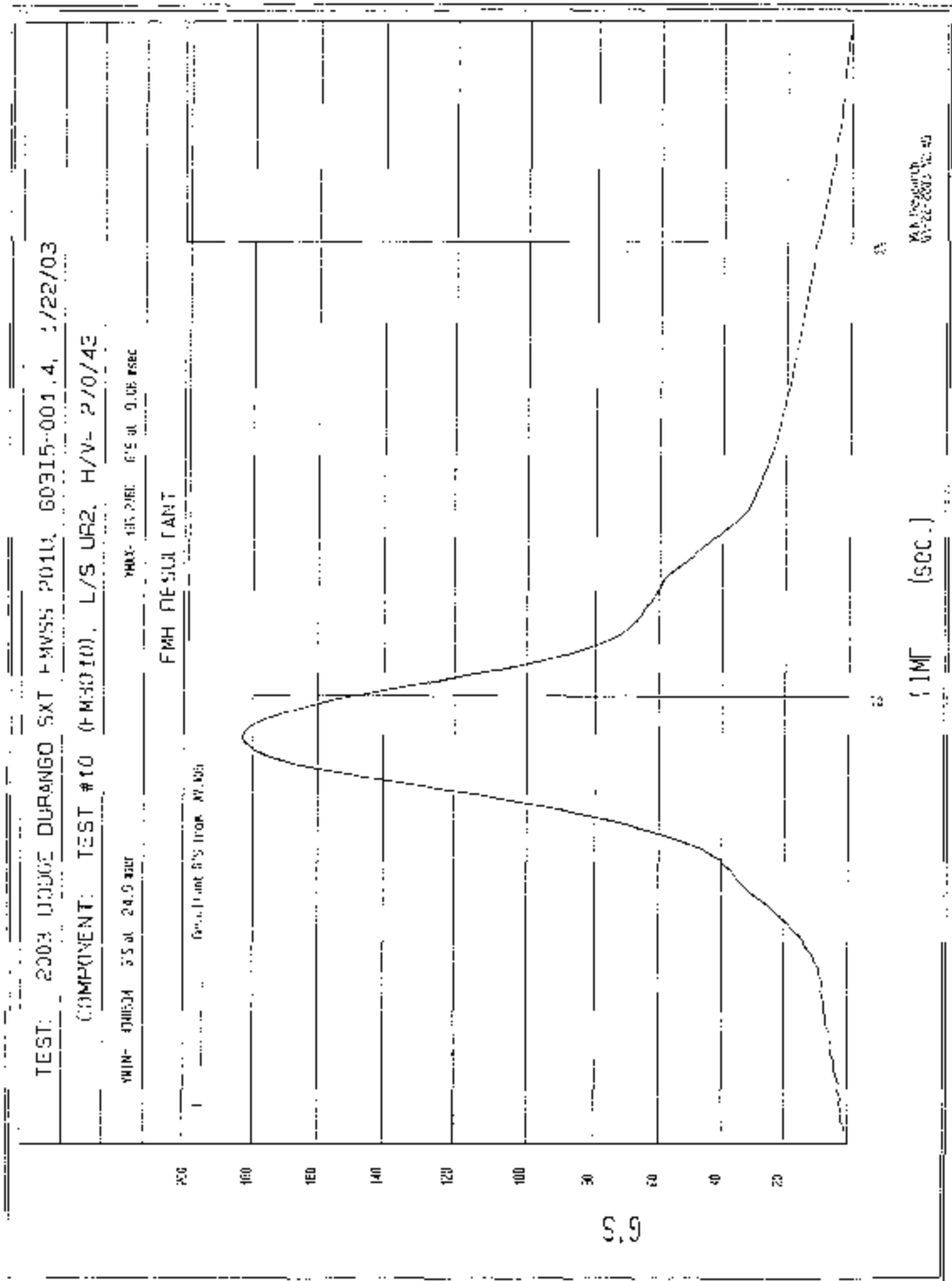
TEST: 2003 DODGE DURANGO EXT FMVSS 2010, G0315-001 4, 1/22/03

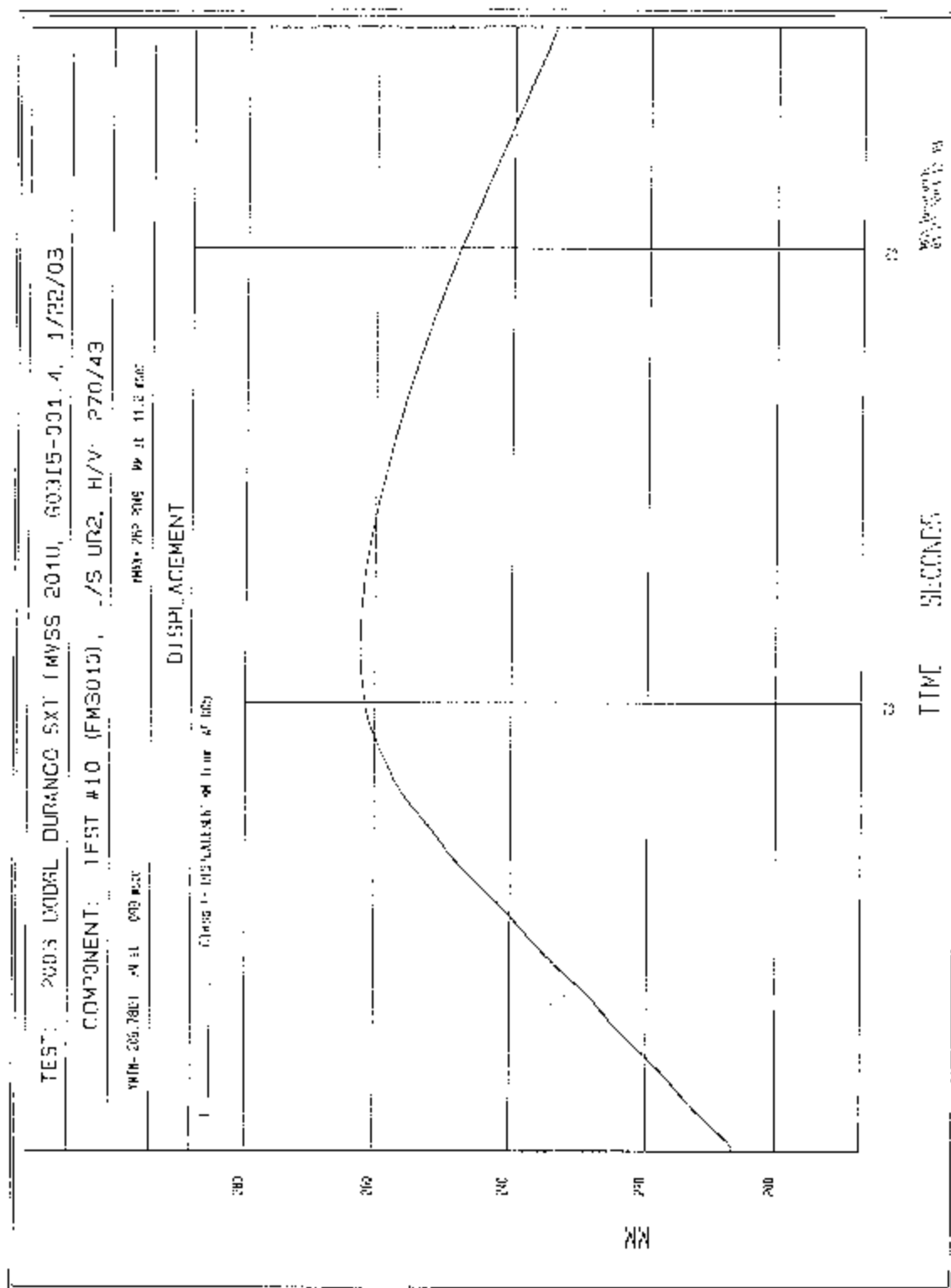
COMPONENT: TEST #10 (H3010), L/S UR2, H/V- 270/43

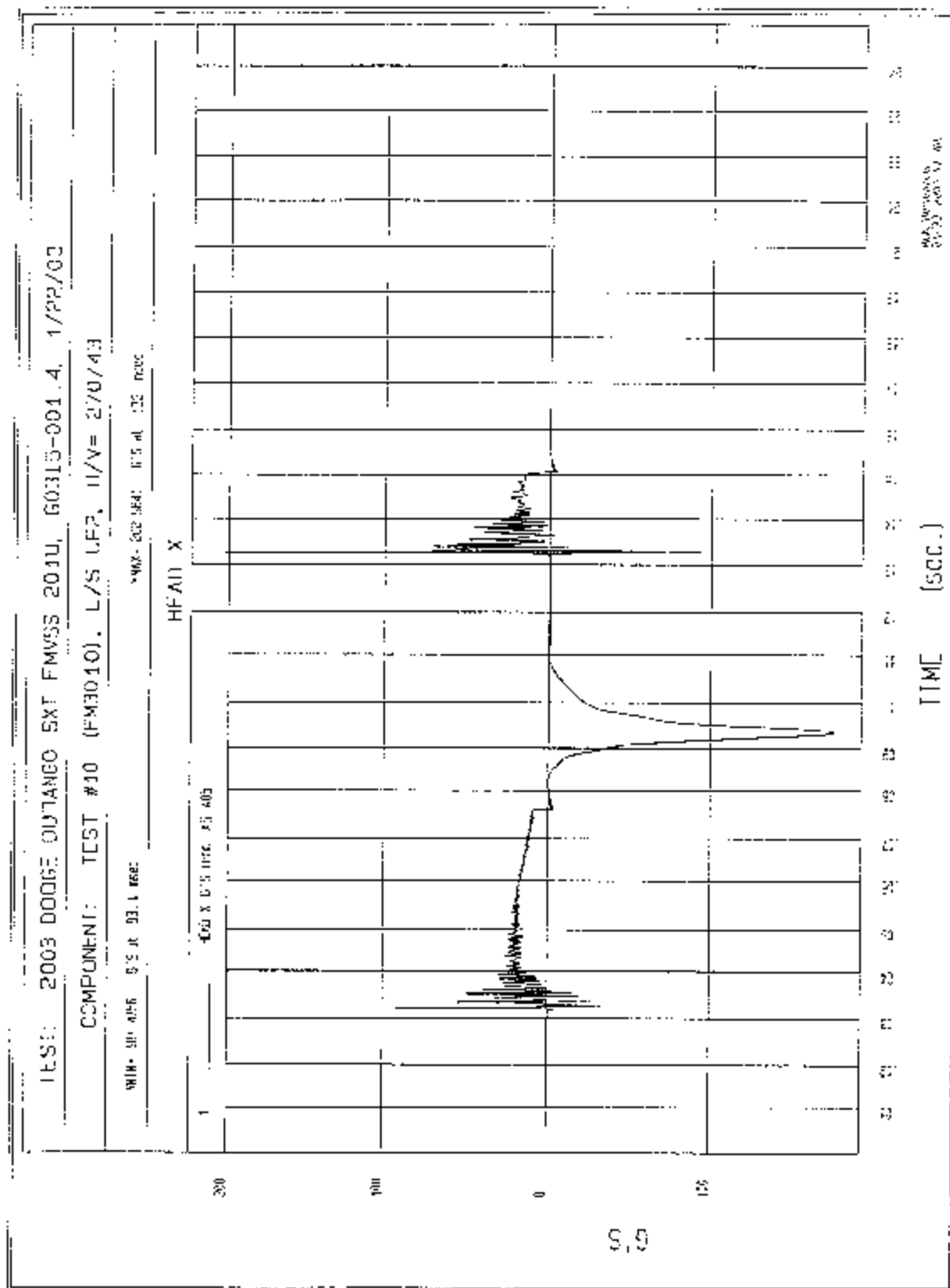
HEAD X as a function of DISPLACEMENT

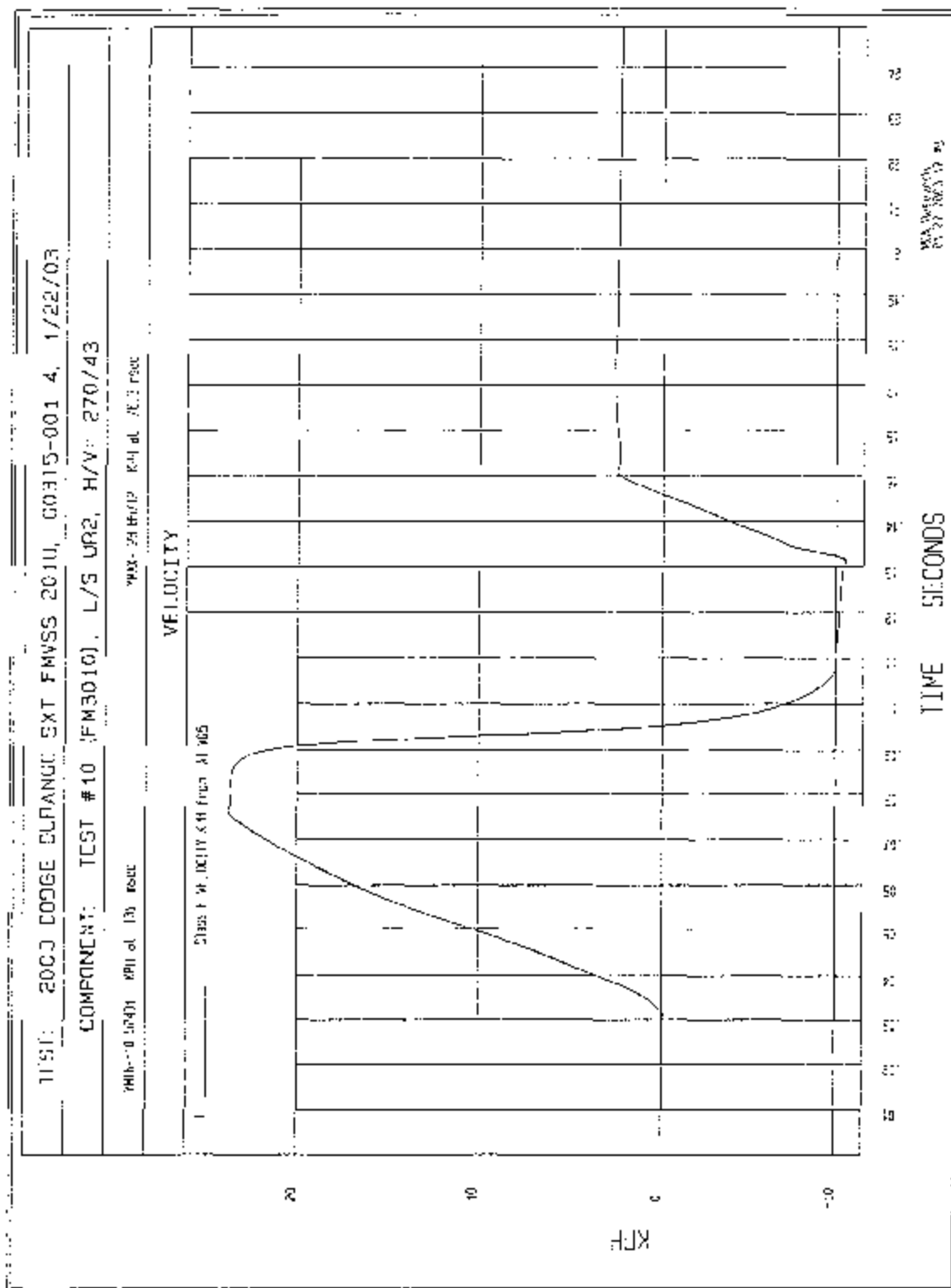


MAX. PEAK
CL. 22.5000









4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

The following section lists the test equipment for the compliance test series. Items marked with an asterisk are calibrated by an external lab. An additional summary table is given for the pre and post-test calibration data for the Free Motion Headforms. The temperature trace to confirm testing was conducted between 66°F and 78°F (19°C - 26°C) is included in Appendix A.

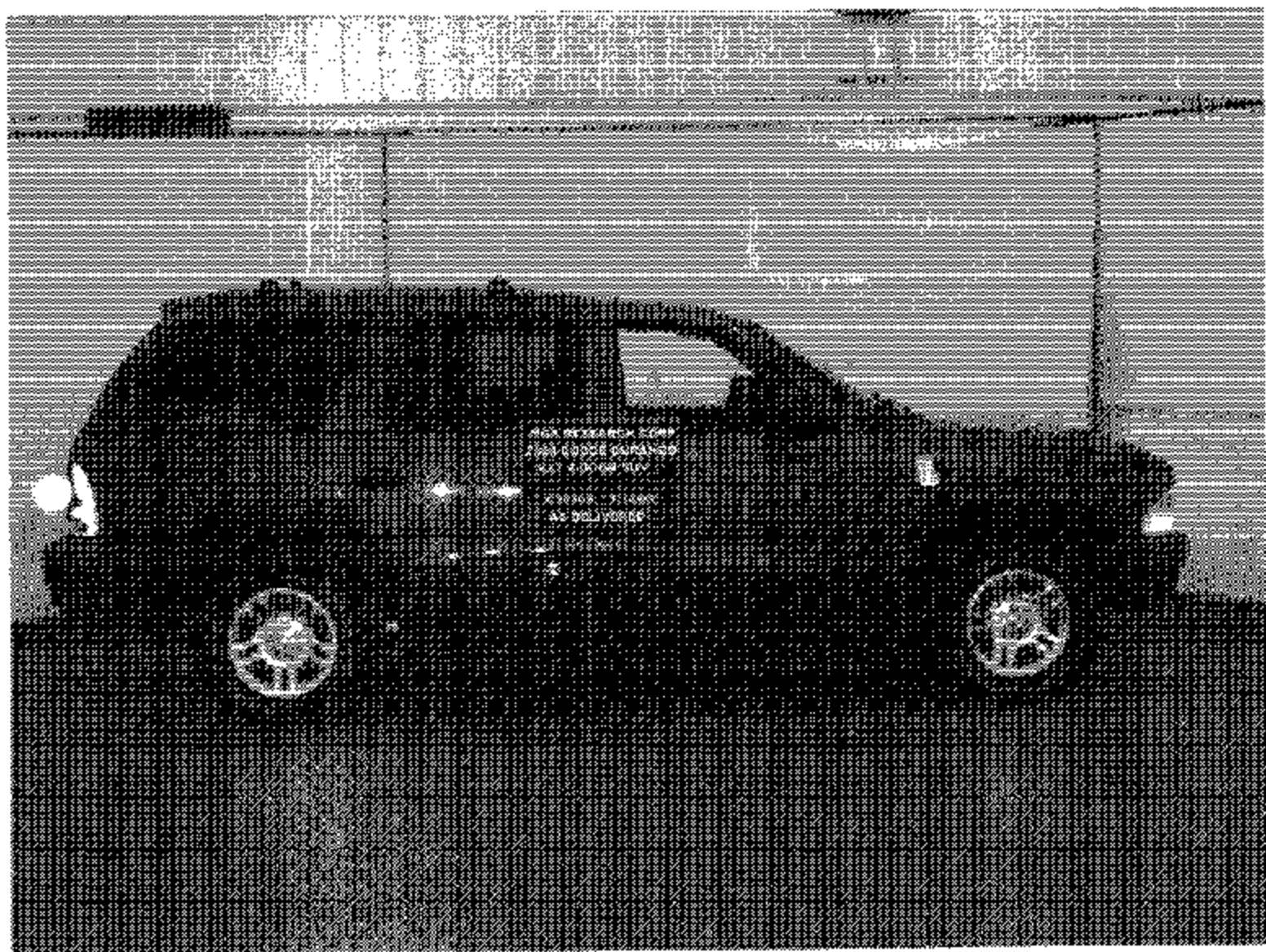
TABLE 4-1 LIST OF ITEMS USED

ITEM	MANUFACTURER NAME	MODEL #	FUNCTION OF ITEM	ACCURACY	CAL. INTERNAL
Head Drop Tower (includes test frame and DAS)	MGA Research Corp.	MGA-100-DC	FMH Calibration	N/A	N/A
Accelerometers	Endevco	7284-2000	Acceleration Data	±0.5%	6 months
*Digital Inclinometer	Macklanburg-Duncan	PRO 360	Set Angle of FMH/Targeting	0.1°	Annual
FMVSS 201U Test Frame (includes the propulsion control system, actuator, test frame, and DAS)	MGA Research Corp.	MGA-100-FMH	Test System	N/A	N/A
Free Motion Headforms	UTAMA UTAMA UTAMA	035 036 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Kodak	RO1000	Record Event	N/A	N/A
*FARO~	Faro Technologies	S08059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Protractor	Stanley N/A Craftsman	33-215 -- --	Measurement Targeting FMH setup Horizontal Measurement	1 mm N/A 0.5°	Annual
*Vehicle Scale 9804-022/9805-175	Cardinal	8950F	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	AP-20	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	TL120	Record Temperature and Humidity	± .5°C ± 1% RH	Annual

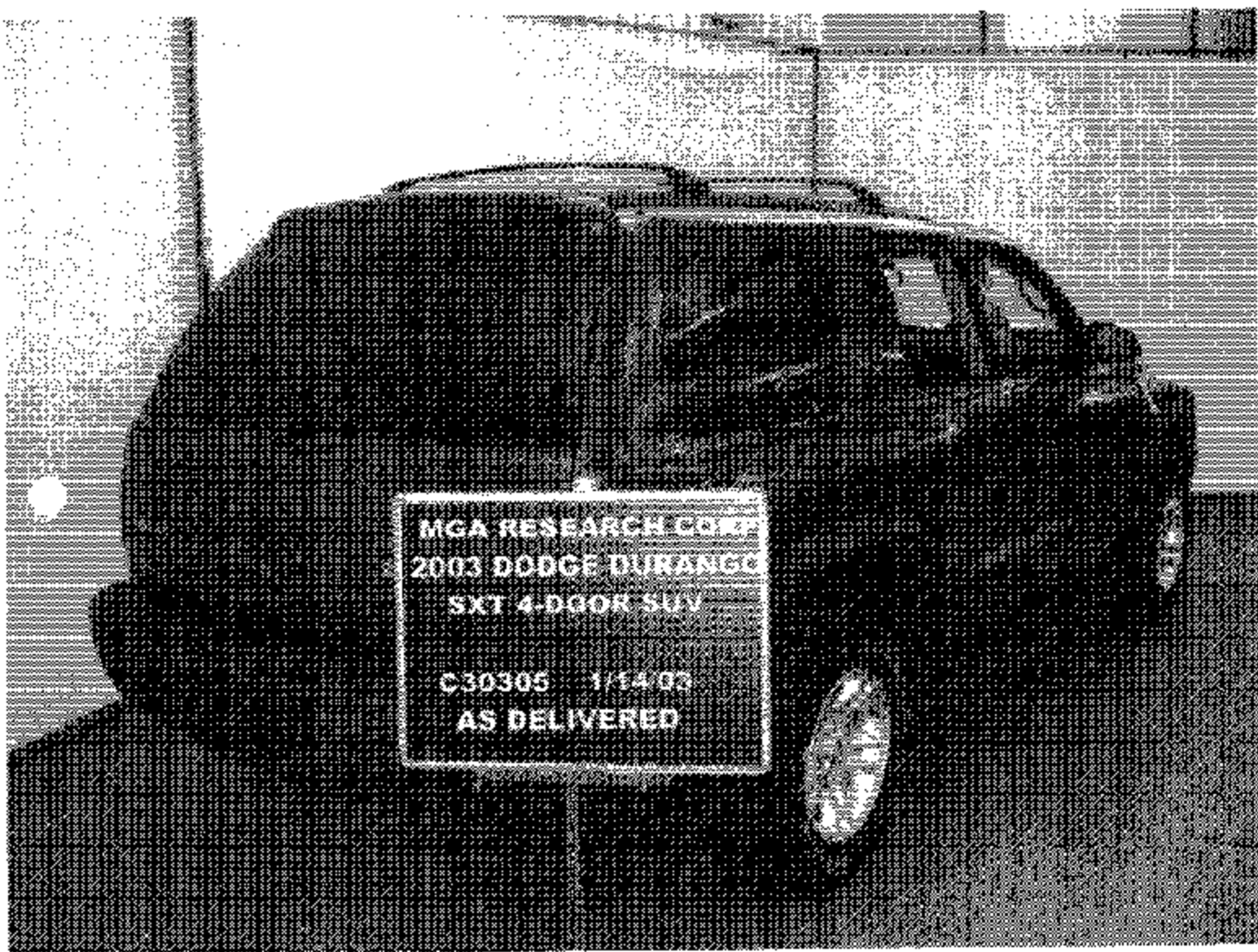
TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE

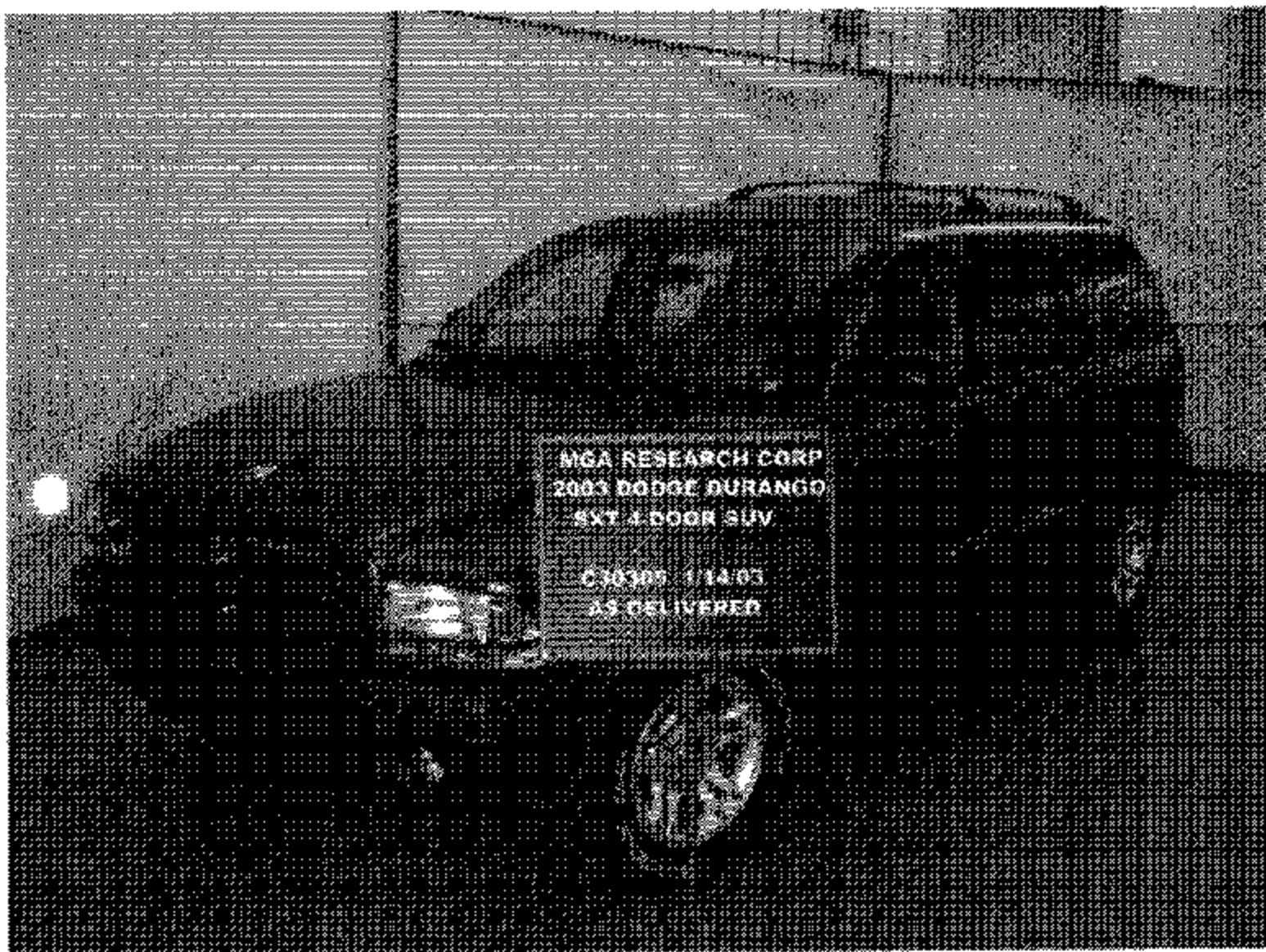
FMH Serial #		Weight (lbs)	Temp (°C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.02	21.0	28.0	241.7	4.3	Yes
Post	#35	10.02	22.0	22.0	243.1	10.7	Yes
Pre	#36	10.03	21.0	28.0	255.6	8.6	Yes
Post	#36	10.03	22.0	22.0	253.5	3.3	Yes
Pre	#38	9.99	21.0	28.0	257.1	6.9	Yes
Post	#38	9.99	22.0	22.0	255.5	5.0	Yes

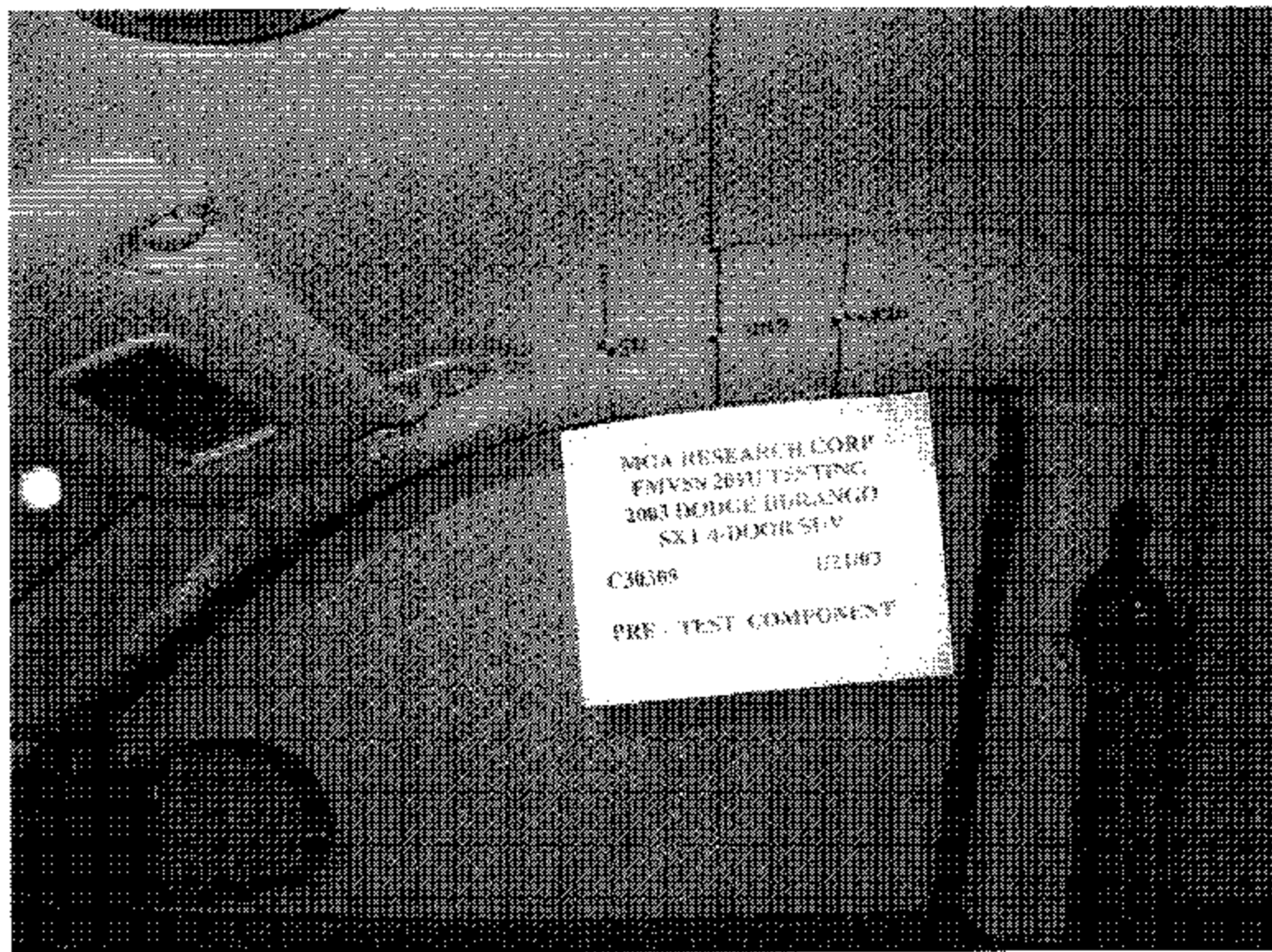
Calibration certificates and headform calibration information can be found in the P572L Performance Calibration report which accompanies this report.









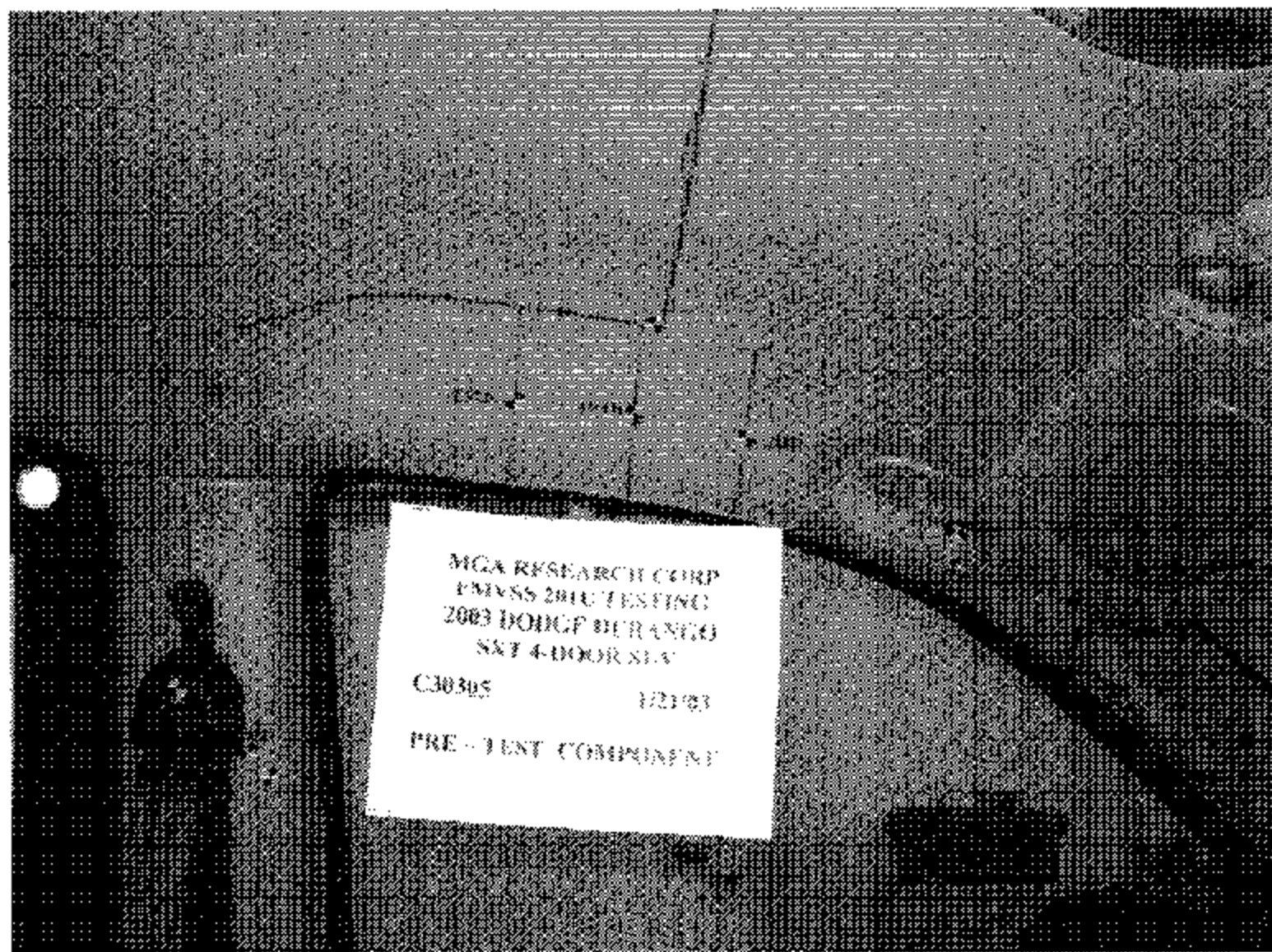


MCA RESEARCH CORP
FMVSS 2030 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30369

1/21/03

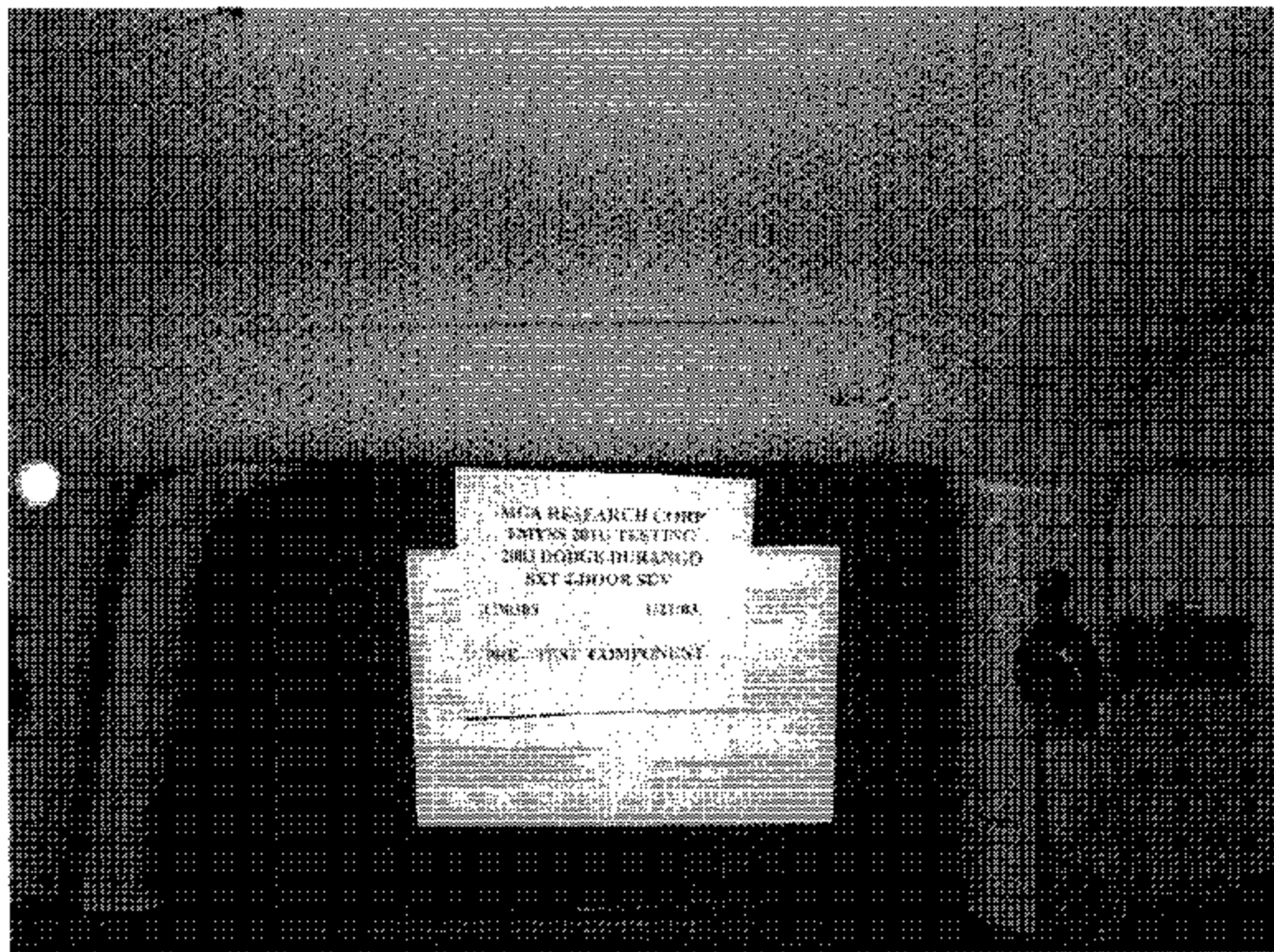
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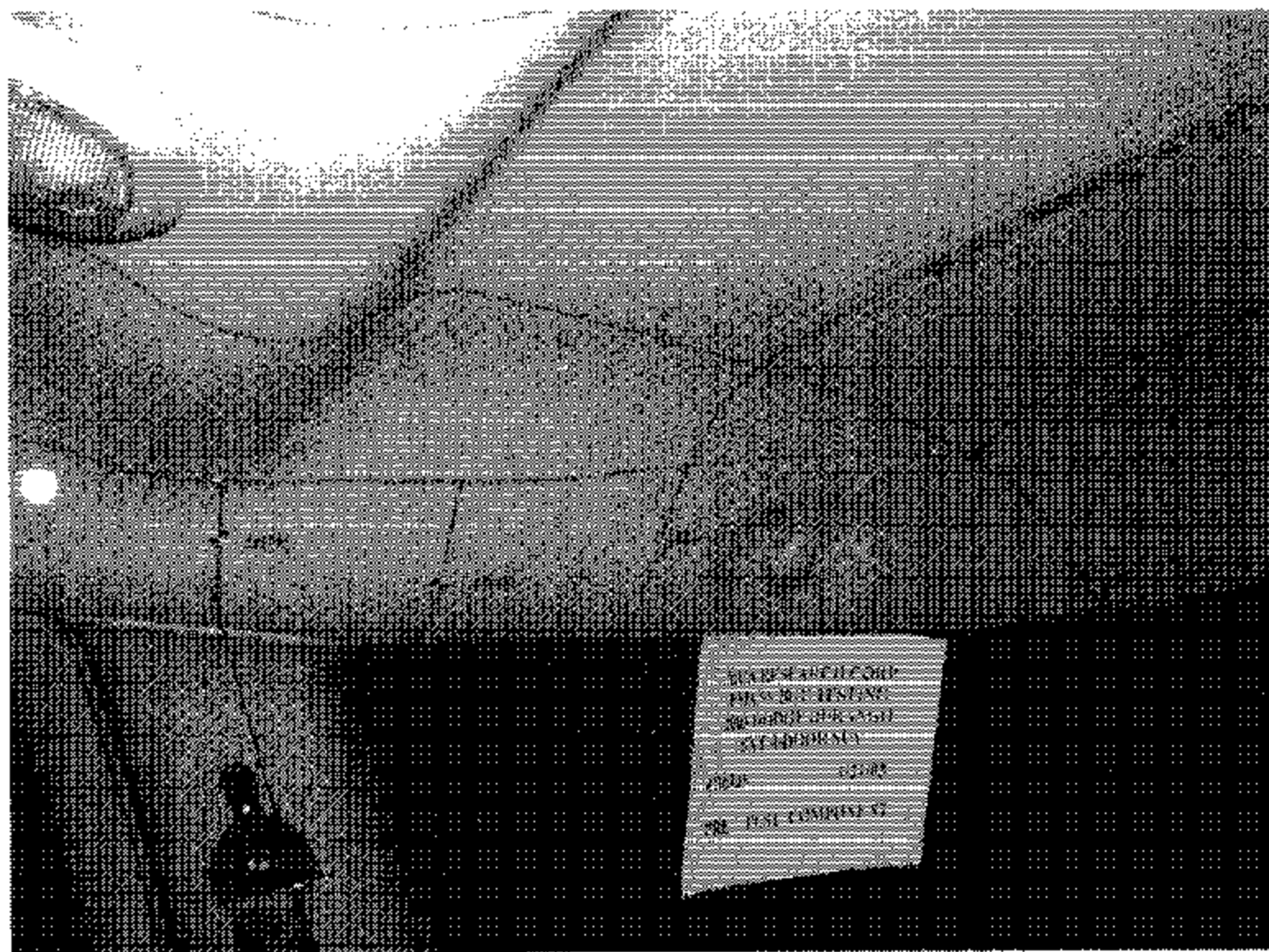


MILWAUKEE ARCH CORP
EMVSN 1011 TESTING
2001 DODGE DURANGO
SNT 4-10-00 SUV

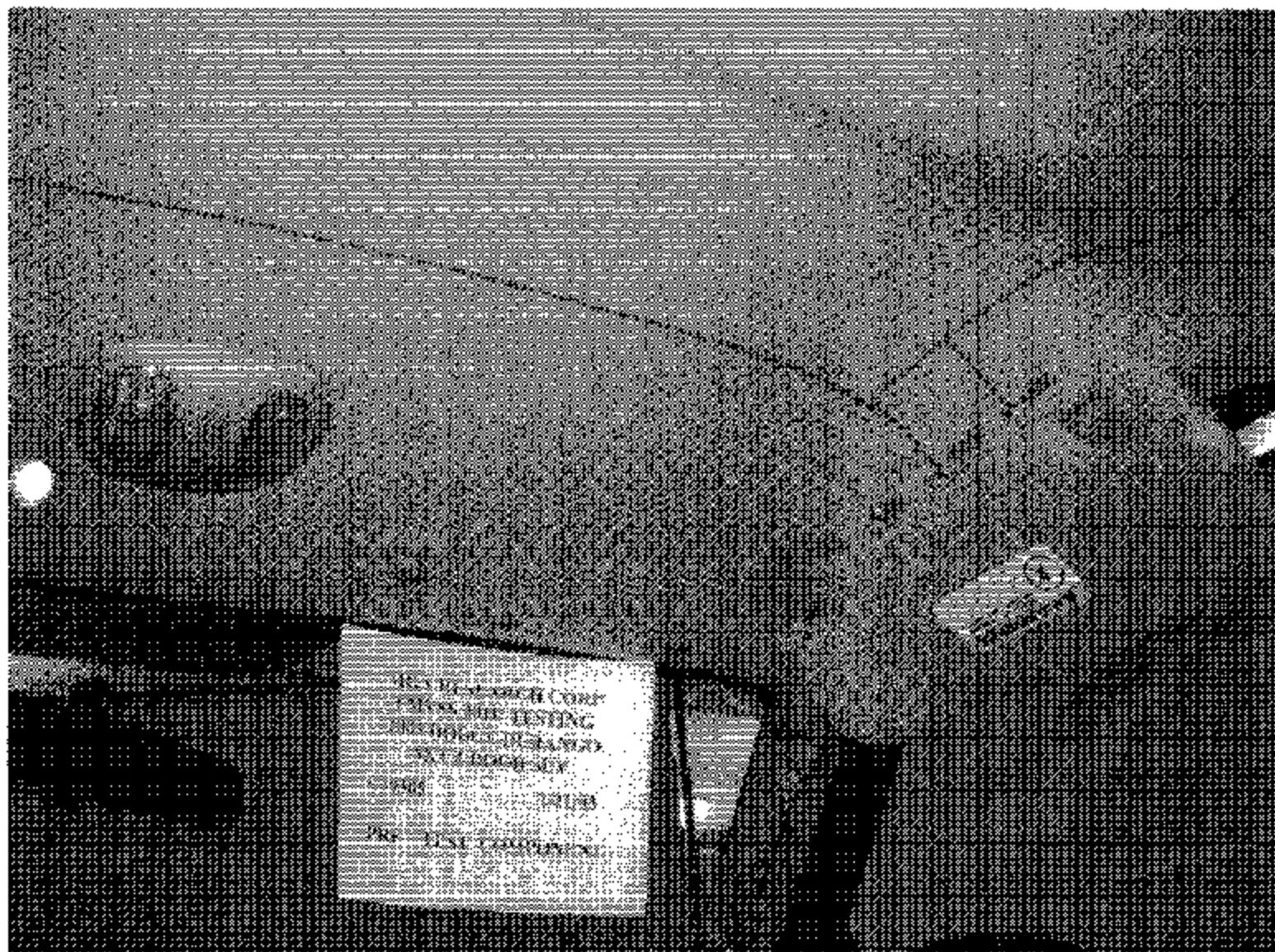
C30305 1/2103

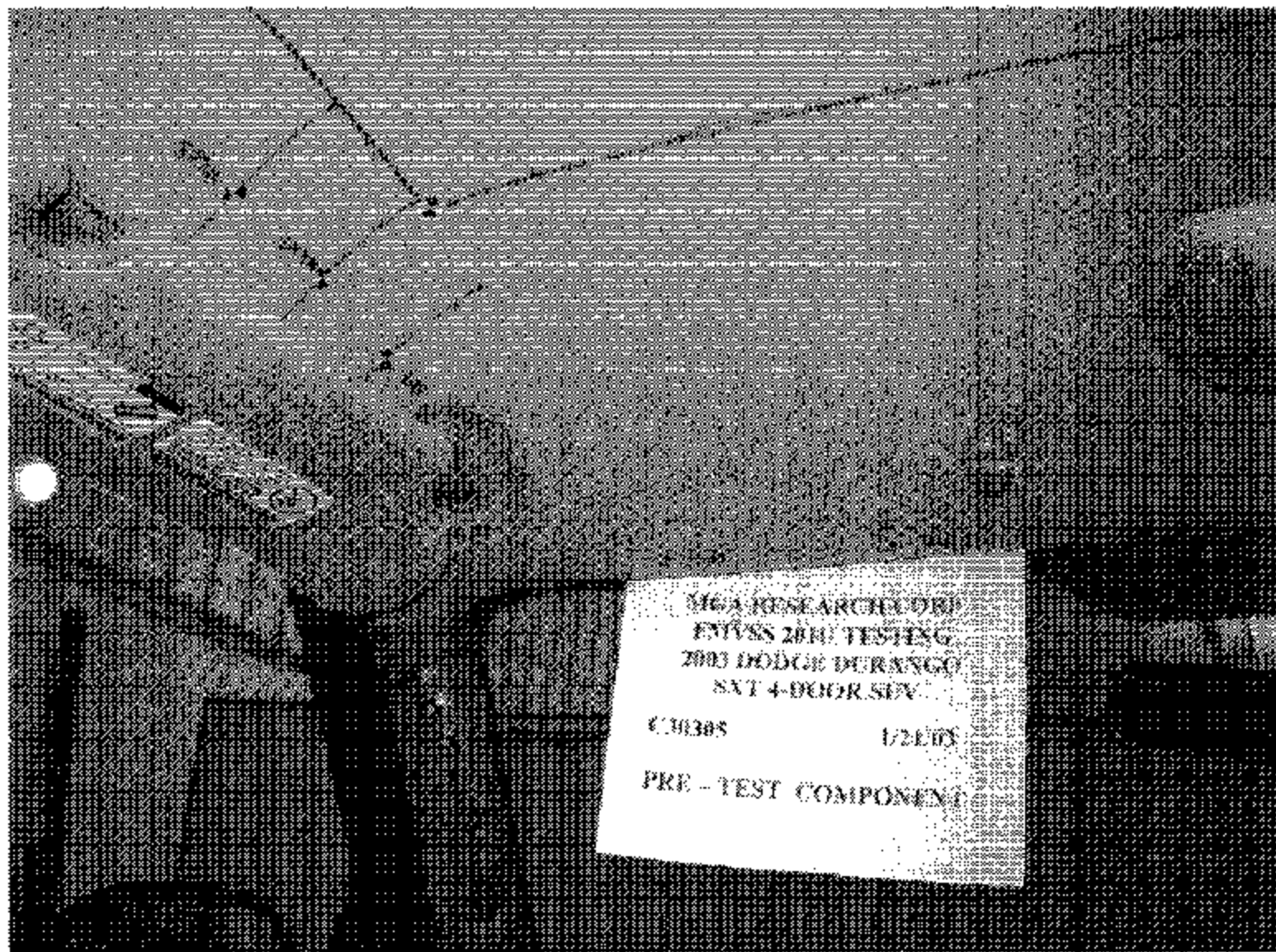
PIEC - TEST COMPONENT









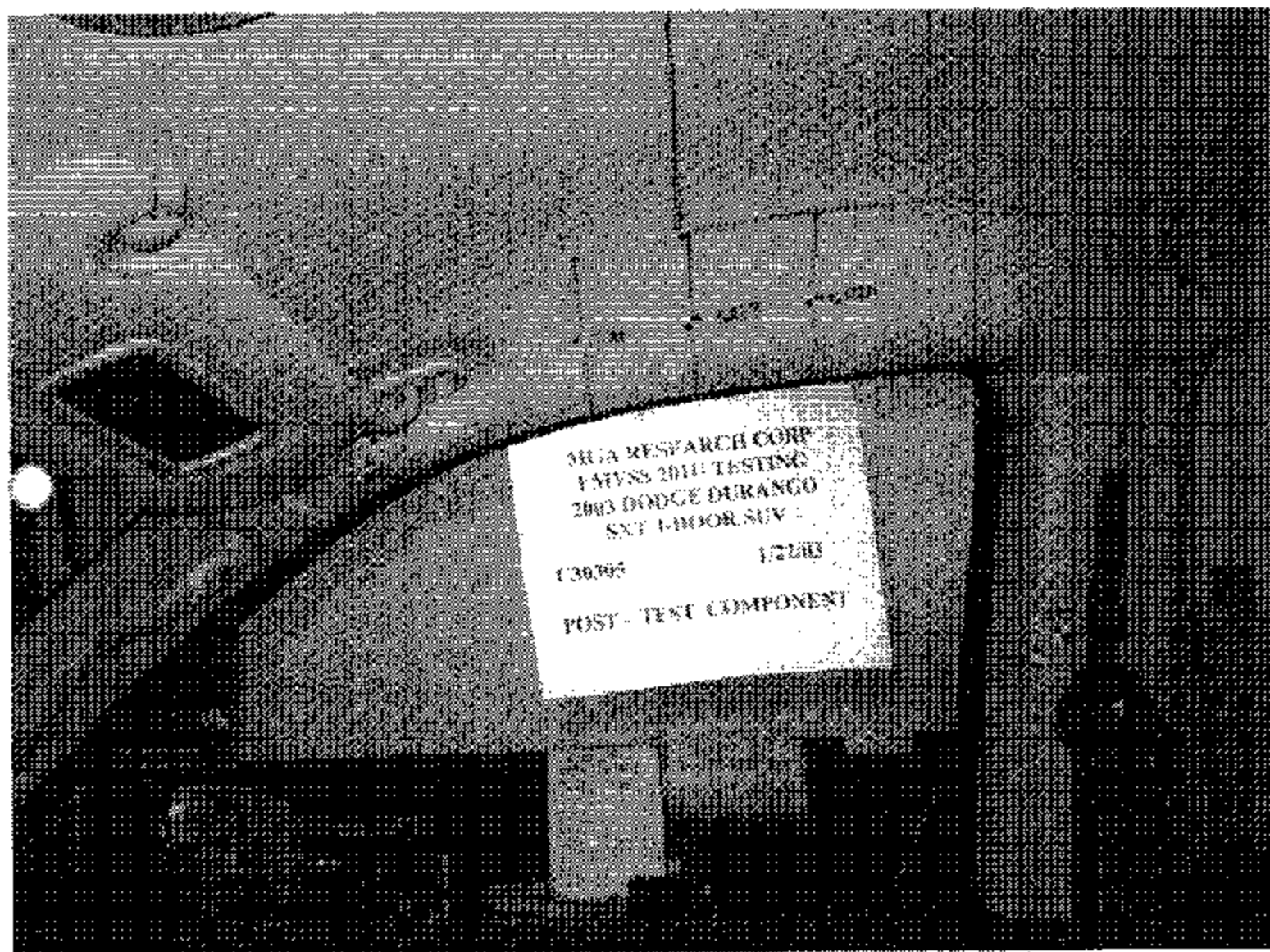


MGA RESEARCH CORP.
ENVSS 2000 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C-30305

1/21/05

PRE-TEST COMPONENT

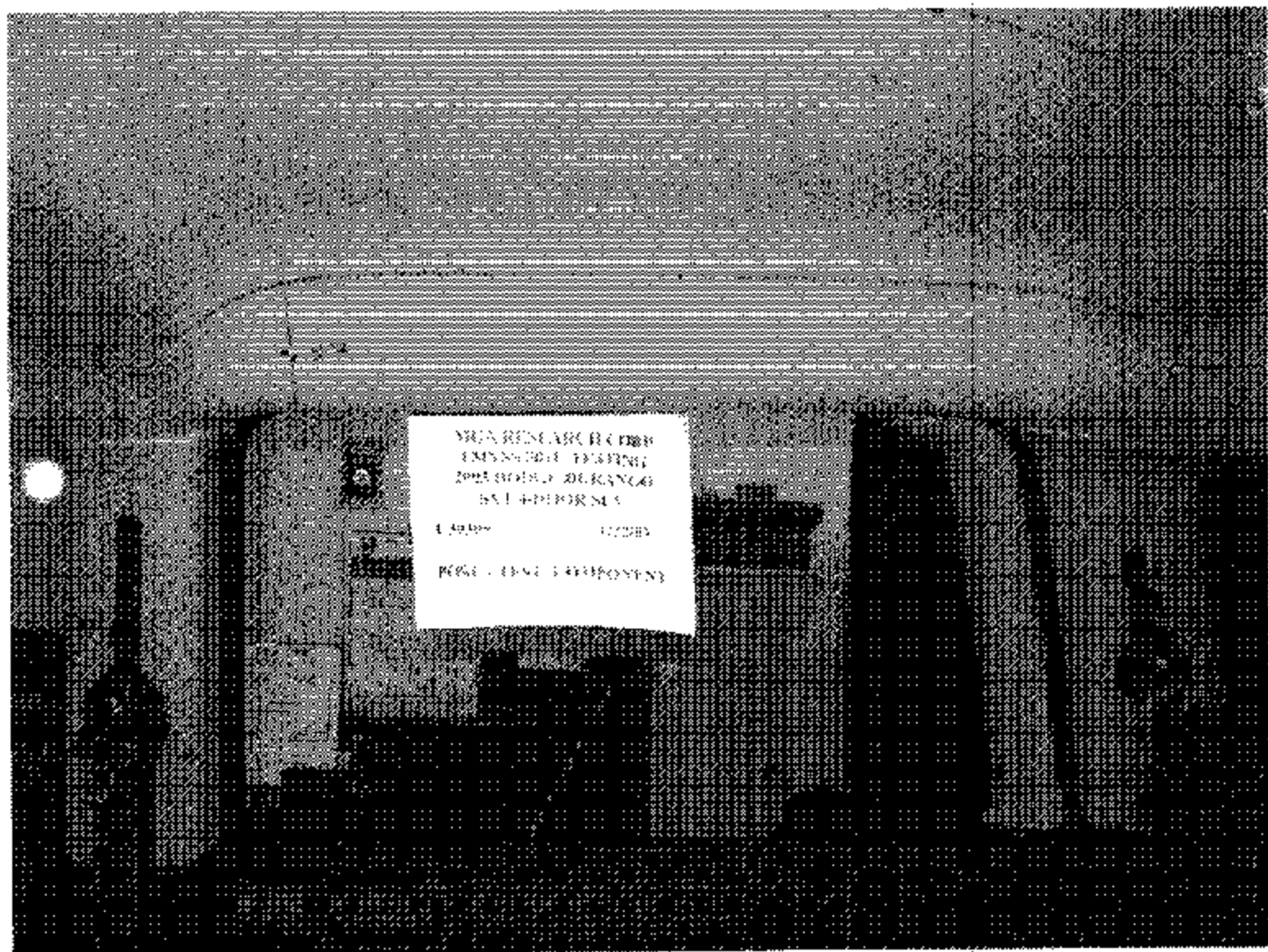


MGA RESEARCH CORP
EMVSS 2010 TESTING
2003 DODGE DURANGO
SXT 4-DOOR SUV

C30205

1/22/03

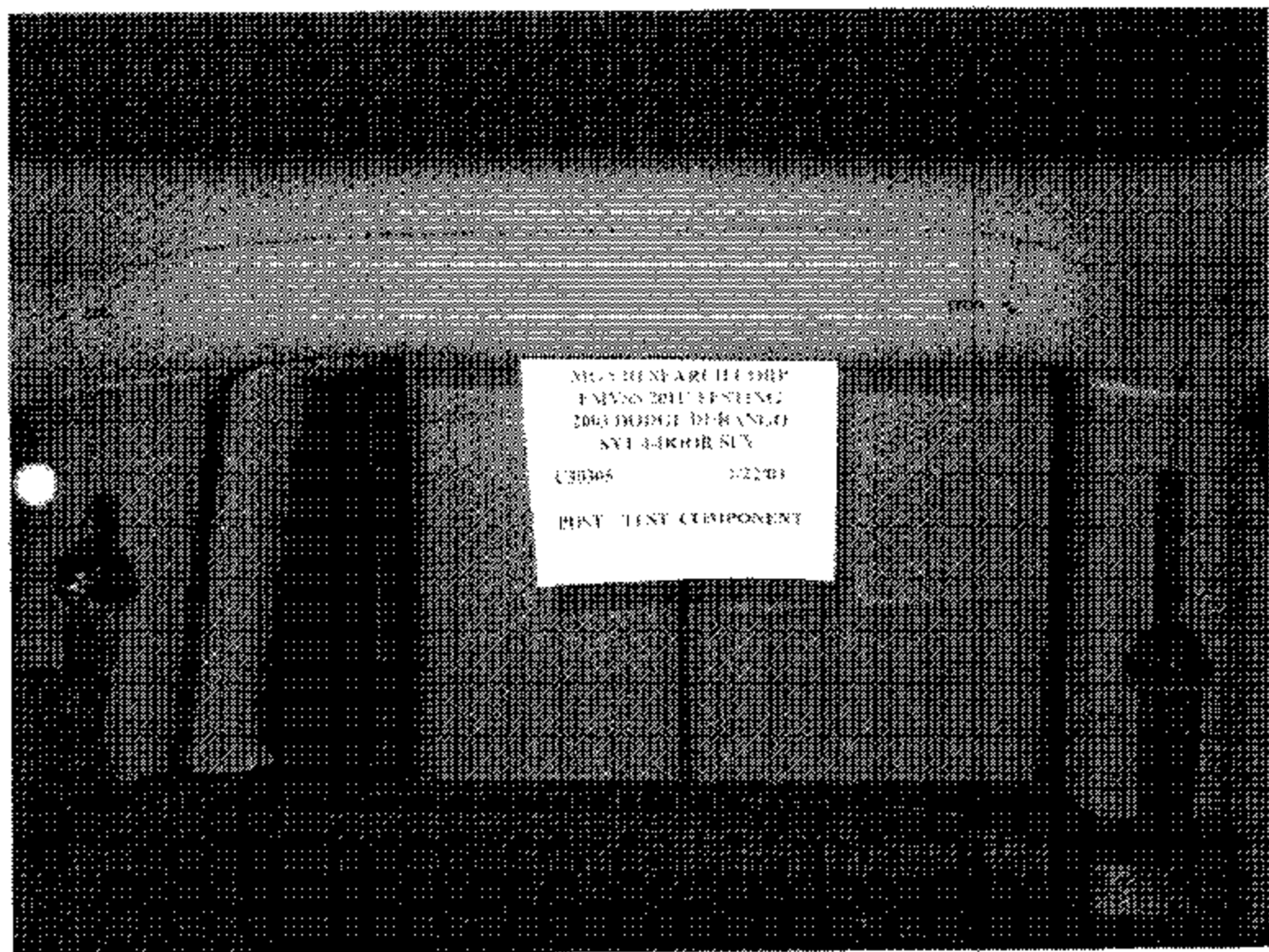
POST-TEST COMPONENT

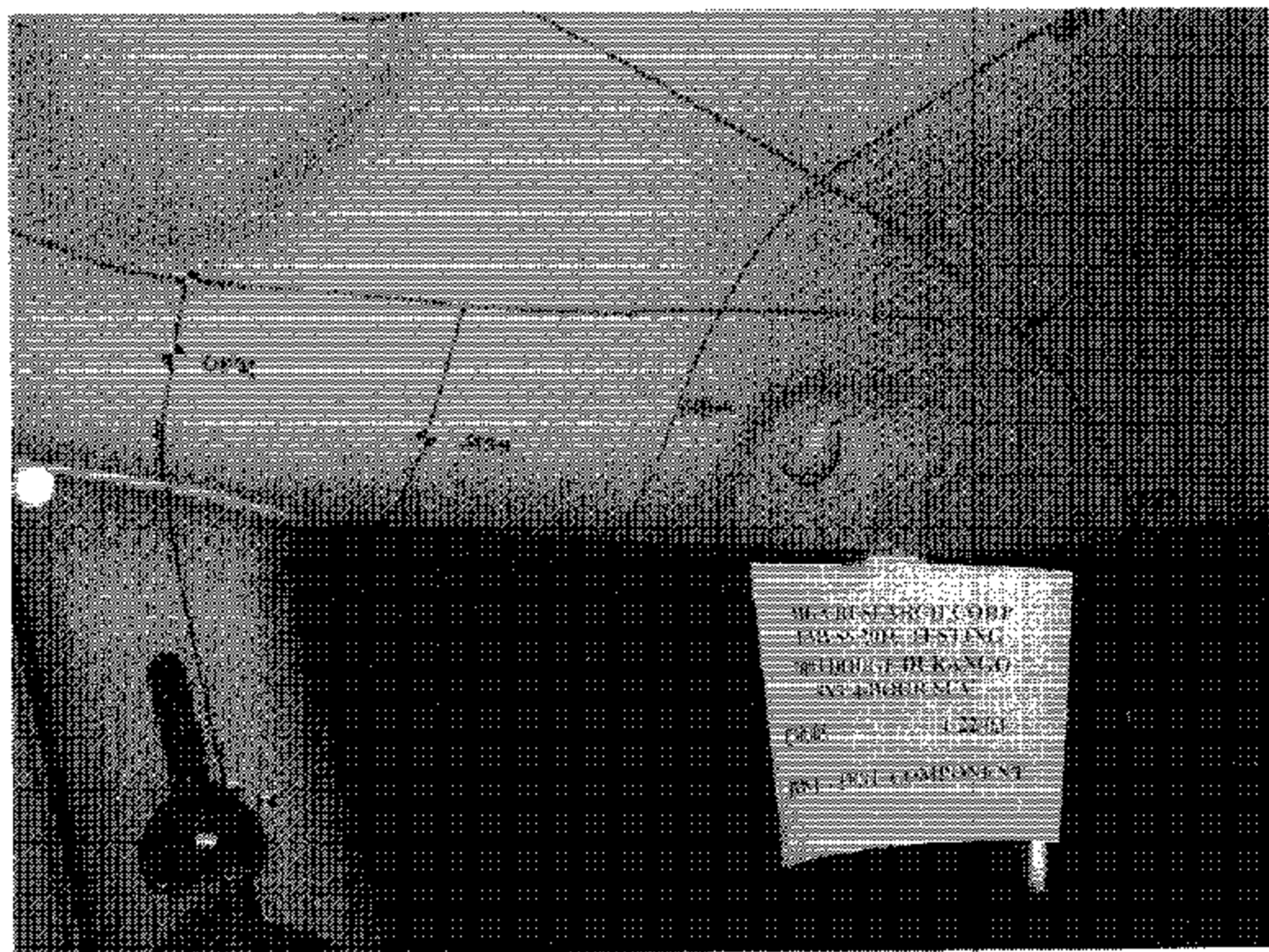


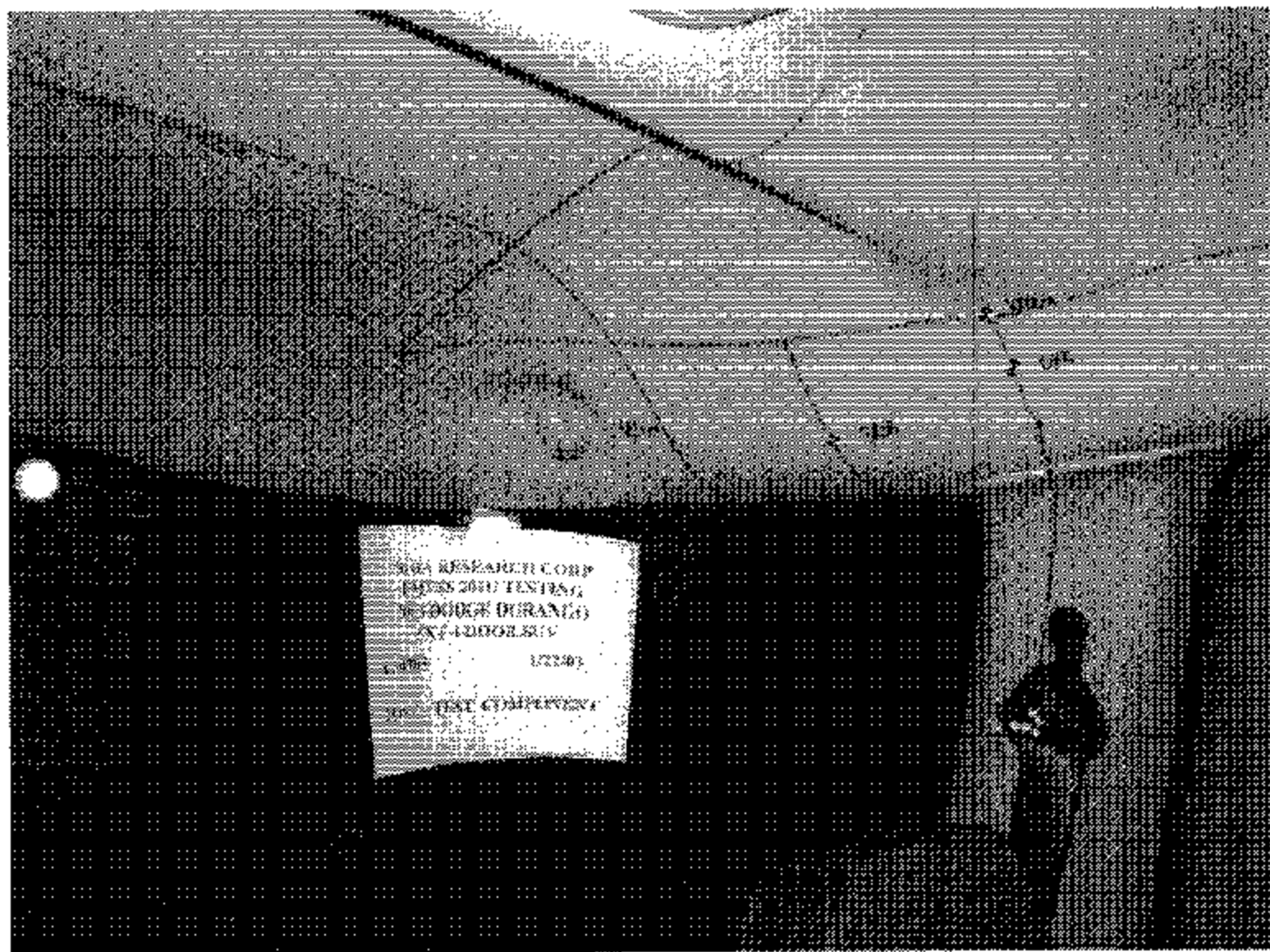
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YUAN RENCAI (YUAN RENCAI)
YUAN RENCAI (YUAN RENCAI)
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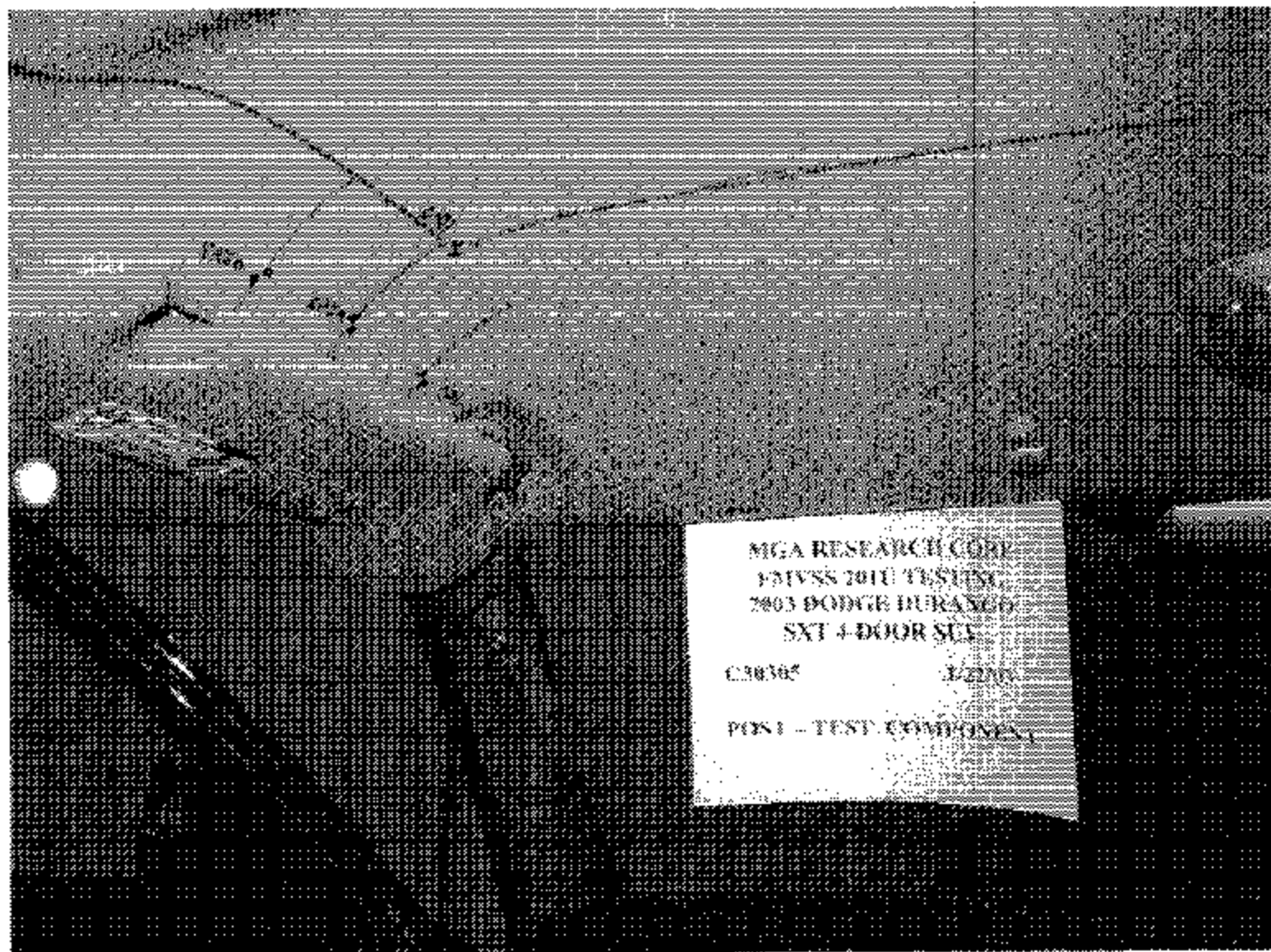


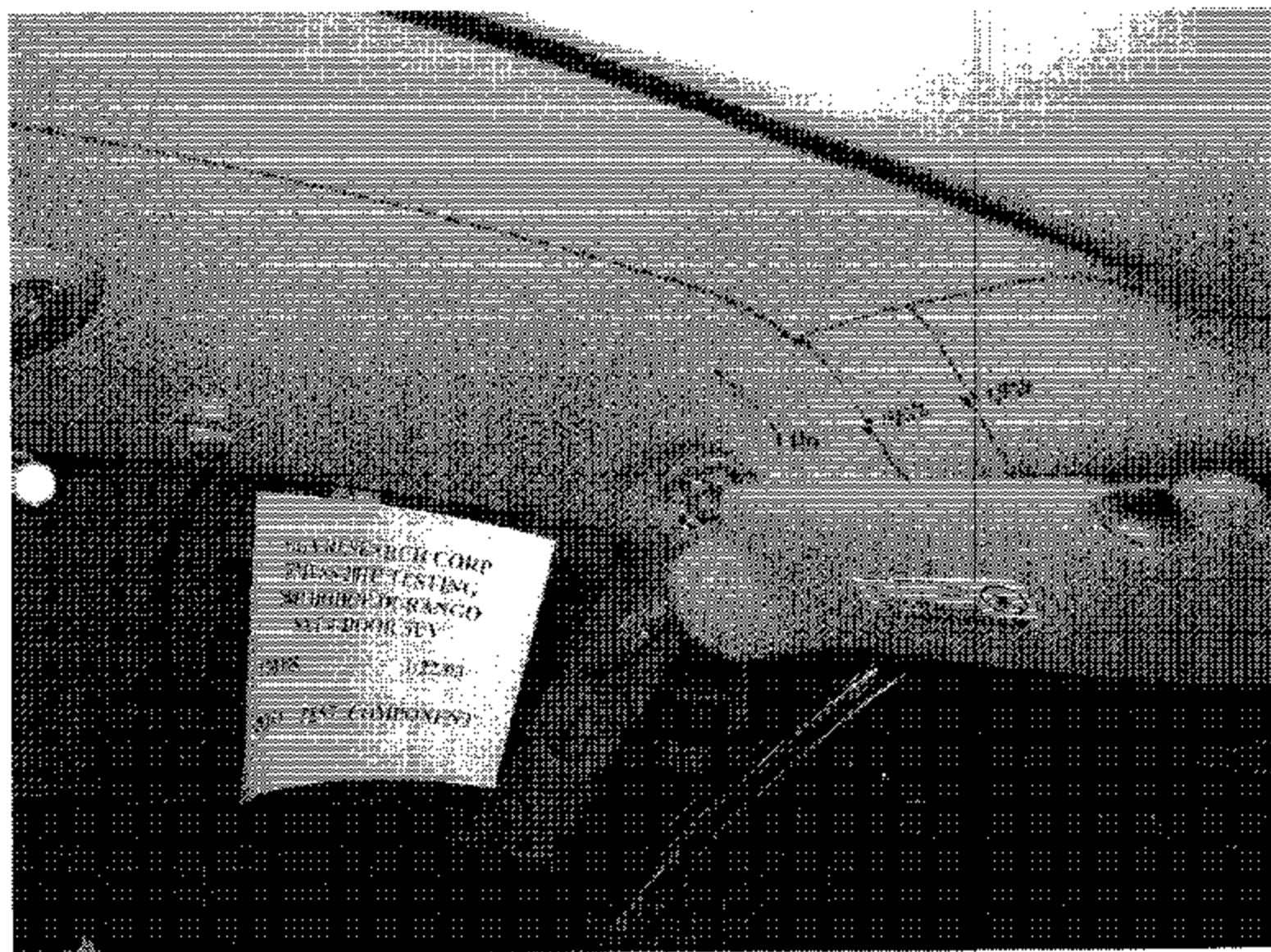


MAGNETIC TAPE
RECORDING TAPE
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C30305 Temperature Trace 1/21-22/03

